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ABSTRACT

The Communication Theory and Methodology section of the proceedings contains the following 12 selected papers: "Innovativeness and Perceptions of Faculty Innovation Champions on the Diffusion of World Wide Web Course Features" (Patrick J. Sutherland); "A Communication 'Mr. Fit'? Living with No Significant Difference" (Fiona Chew, Sushma Palmer, and Kalyani Subbiah); "How Does Political Commentary Shape Perceptions of Political Candidates? A Quasi-Experimental Investigation of the 2000 Vice-Presidential Debate" (Fang Wan, Patrick Meirick, Alina Oxendine, and Justin Holmes); "Building a Health Promotion Agenda in Local Newspapers: Community Structural Pluralism and News about Breast Cancer" (Beverly Martinson and Douglas Blanks Hindman); "Assessing the Impact of Recession News: A Time-Series Analysis of Economic Communication in Japan, 1988-1999" (H. Denis Wu, Michael W. McCracken, and Shinichi Saito); "Counteracting the Biasing Effect of Unrepresentative Exemplification on News Readers' Issue Perception" (Hao-Chieh Chang); "'You're No Jack Kennedy!' The Influence of Post-Debate Commentary on Candidate Evaluations" (Jennifer L. Williams and Christina L. Fiebich); "Use of Online News Sites: Development of Habit and Automatic Procedural Processing" (Maria E. Len-Rios and Clyde H. Bentley); "Presidential Agenda Setting: A Pilot Study on the Weekly Radio Addresses and Media Coverage of Foreign Policy" (Beverly Horvit); "Teens as the Vulnerable Surfers: The Third-Person Perception and Commercial Web Sites Censorship" (Seounmi Youn, Fang Wan, and Ronald J. Faber); "Applying the Health Belief Model To Promote Healthy Lifestyles via Television in Poland" (Fiona Chew, Sushma Palmer, Zofia Slonska, and Kalyani Subbiah); and "Global Triadization: A Theoretical Framework for Global Communication Research" (Shelton A. Gunaratne). (RS)

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Student Paper

Innovativeness and Perceptions of Faculty Innovation Champions on the Diffusion of World Wide Web Course Features

Presented to the Association for Education in
Journalism and Mass Communication
2001 Convention in Washington, D.C.

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Innovativeness and Perceptions of Faculty Innovation Champions on the Diffusion of World Wide Web Course Features

Some educators have declared that a paradigm shift of learning is underway in higher education and that the shift is partially fueled by technological innovations (Beller & Or, 1998). Betty Medsger, author of the 1995 Media Studies Center study titled *Winds of Change: Challenges Confronting Journalism Education*, has asked why journalism educators are not the leading innovative thinkers concerning the issues and challenges of the field (Sass, Maynard, Gutierrez, and Medsger, 1997). Among Medsger's recommendations for journalism education programs, are educating students to be cutting-edge journalists and teaching them to use and understand new technologies while focusing on the main objective of finding and writing stories.

Modern institutions are no longer supported solely by their buildings and furnishings, but also by computer software and telecommunication systems such as the Web (Mitchell, 1995). Most would agree that the computer is a tool by which students can explore the world (Hunt, 1996). Liska & Grune (1995) suggested that the Internet, and its fastest growing component the Web, reflect changes in our society. Few things are held to be absolute. The Internet exemplifies that.

A current "crisis" in education centers around the ability of existing educational approaches to deliver knowledge, values, and skills appropriate to a rapidly changing world (Greening, 1998). Information technology (IT) can help students to accept greater control and responsibility for their own learning (Hunt, 1996). Sloan (1997) said that higher education needs to embrace IT in order to help preserve the university. For example, computing and communication technologies offer opportunities for engagement with other people and are powerful tools in constructing remarkable artifacts and experiences (Shneiderman, 1995).

Zaltman et al. (1973) agree with Rogers (1995) and others that innovations involve social change. Zaltman et al.'s definition of an innovation is " any idea, practice, or material artifact perceived to be new by the relevant unit of adoption" (p. 10). They stress that the adopting unit can vary, from an individual to a firm, or another entity such as a city or governmental body.

This study examined perceptions of faculty and administrators involved in courses with Web features at Association of Schools of Journalism and Mass Communication (ASJMC) programs. This research considered the role of the innovation champion as a change agent and what channels and formats of communication that innovation champions found to be most effective in explaining Web course features to others. The study also looked into innovativeness characteristics of top administrators and faculty using the Web.

Background

In his book City of Bits, Mitchell (1995) argued that citizens should care about changes in the electronic information age because the Internet has a fundamentally different structure than what we have been used to. For example, physical addresses are not as important; an address on the Internet is an access code. Places in cyberspace are software constructions. Software creates virtual environments for interaction. These network connections create new ways of sharing knowledge.

The impact of technological innovations on education in general, and the journalism and communication field in particular, is not a recent concern. Miles (1964) stressed that we need to know why an innovation spreads slowly or rapidly and what the causes of resistance to change are in educational systems. Schramm (1977) wrote that almost all teaching involved multimedia components. Green (1993) stated that computer-based technology could have the same type of impact on curricula that the development of the printing press had on higher education. For example, individuals owning computers, modems, and having Web design skills, can publish their own newsletters, newspapers, or magazines on-line reaching a worldwide audience.

Information technology (IT), which includes multimedia education and the Internet, is now versatile, powerful, and affordable enough that the new configurations of technology can alter the structure of undergraduate education in the U.S. (Pipes & Wilson, 1996). Past problems with the diffusion of IT innovations included technologies being introduced in isolation from each other, prohibitive costs, and the practice of IT innovations being applied on top of existing educational models, instead of fundamentally driving changes in the structure of the educational experience.

Research over the past 70 years has not shown that the use of innovative media in higher education results in increased learning for students (Clark 1994). Clark concluded that while indicators are that media do not influence learning, course designers should and must choose the less expensive and most cognitively efficient way to achieve a learning goal. He noted that it is important for educators to utilize media capable of delivering the appropriate instructional method in the speediest fashion and at the lowest cost.

Kozma (1994) wrote that Clark created an undesirable schism between media and learning methods. Kozma contended that media could make significant contributions in schools if their applications are designed into the complex cultural and social environments of learning. He stated that traditional models of instructional design have not addressed the complex relationships between media and learning. Jonassen, Campbell, and Davidson (1994) presented a third perspective concerning innovative media and learning. They said that learning is situationally dependent and that while media are not responsible for learning, if educators consider the process of learning first, they may later identify appropriate media which can facilitate it.

Masters and Meier (1990) studied technological innovation and risk taking in higher education. They studied examined campus wide adoption of a management information system (MIS). They said that in the academic environment adopting technology involves uncertainty and can be seen as a challenge or threat and as taking a risk. They looked at adopter characteristics such as age, gender, income, status and level of education. Their findings were that faculty members displayed characteristics similar to early adopters, they sought technical information, had higher levels of education, and were willing to take risks. They concluded that innovation and technological change needed to be seen as an organizational commitment.

With rapidly diffusing technological innovations, the question becomes how to teach efficiently (Cuban, 1986). Alfred North Whitehead said "The best education....is to be found in gaining the utmost information from the simplest apparatus" (p. 3). Problem solving in a world characterized by rapid change requires the thinker to integrate base knowledge and thinking skills (Rubenstein & Firstenberg, 1987). Rubenstein and Firstenberg stress that computers and other technology are to be used as tools to test our ideas and to perform analysis, extrapolation, prediction, and verification. They wrote that active processing and retrieval inside a context in which the problem is framed is important. Not passive note taking. They caution, however, that moving too quickly into a problem solving mode could be a problem.

Teachers using the Web in courses may fill the role of what Brookfield (1987) calls facilitators or "helpers." He said teachers should adopt diverse methods and resources. Risk taking is important and the facilitator should not expect perfection. Shoemaker (1993) wrote that a recommended instructional goal in a journalism and mass communication class on critical thinking is to get students to examine problems from multiple perspectives. For example, looking at a problem from another person's viewpoint. Journalists should be trained to seek out many sources and versions of information about reality. The use of the Web in such a course should help to obtain a diversity of viewpoints and approaches.

It is important to note that in most cases, the Web is used in support of the traditional model of university instruction and therefore the potential of the Web can be lost

(Duchastel, 1997). He stated that a new model of instruction appropriate for the Web is lacking at the present time. The university community is struggling to understand the Web phenomenon. Academe has difficulty acting in a timely manner compared to the business community which is thriving on the Internet. Duchastel said that if the traditional paradigm of professor-centered university instruction is not called into question, the Web instruction will consist of little more than a photocopy machine-like usage.

The Web is a social restructuring force that can help learners break outside of the confines of the traditional classroom (Duchastel, 1997). He wrote that the use of the Web by teachers can lead to development of creative new ways of teaching. Ryder and Wilson (1996) see the learning process becoming distributed between the medium, the learner and the context. They view the Internet not as a medium, but as an infrastructure which offers multiple extensions for student learning such as research, collaboration, self-expression, and reflection. They conclude that the Internet overcomes many of the constraints that are imposed by traditional educational infrastructures.

Bostock (1998) questioned if computer based media will be able to bridge the gap in higher education between the need for collaborative learning and the constraints on higher education. Flake (1996) wrote that while the Web is still in its infancy, educators need to consider how we want this innovation to grow and to become a major contributor to the educational system. Flake stressed that students need to be engaged in an open investigation of the process of learning, sense making, and problem solving. She noted that through the Web, students have access to a wide range of knowledge. Flake suggested that the Web can become a social environment for learning, in other words, students can learn from other students on the Web and they can gain understanding from looking a peer reports, in the portfolio spirit, on the Web. This approach, in short, means that students are no longer solely dependent upon a textbook or a teacher for learning. Students, thus have an active, or interactive part in constructing knowledge that is relevant to them.

Eisenberg and Ely (1993) wrote that educational networks can transform common educational experiences into exciting worldwide interactive projects. They stated that network resources such as the Web can help educators gain more equitable access to expertise, information, and tools in their fields.

Scott (1995) found that under 10% of 250 journalism faculty surveyed thought that journalism education was generally training students well in new technologies such as the Internet. Respondents suggested several possible solutions to the problem. The suggestions included more class time devoted to the issues, more facilities and funding for new technology, more research on the matter, more industry contact, better training of faculty and more real-world training. Scott wrote that arguably it is a case now of technology driving journalism instead of journalism driving technology. Just keeping up with technological developments is a financial and intellectual challenge. She concluded that the message from respondents was clear, journalism education is lagging behind in technology issues and needed to pick up the pace.

A concern of educators is how to integrate new on-line material into courses while at the same time retaining the core curriculum (Gunaratne & Lee, 1996). Gunaratne and Lee stated that instructors need to guide students through the glut of information available on the Internet. They said it is a useful "real world" experience for students. They argued it is the responsibility of faculty to discard "cyberphobia" and incorporate the Internet and Web as learning tools. Panici (1998) surveyed instructors of introductory mass communication courses and found agreement that the use of new media (including the Internet and the Web) is a stimulant to classroom discussion and encourages students to use such technology outside of the classroom.

Theoretical Base

A 1943 Ryan and Gross research project on hybrid seed corn diffusion among Iowa farmers is a seminal work (Rogers, 1995). This study introduced the classical diffusion paradigm that has guided many studies in various fields. This paradigm, in summary form, includes the five characteristics of innovations (relative advantage, compatability, complexity, trialability, and observability), communication channels (mass media and interpersonal), the innovation-decision process (knowledge, persuasion, decision, implementation, confirmation), adopter categories (innovators, early adopters, early majority, late majority, laggards), a social system (including opinion leaders and change agents), types of innovation-decisions (optional, collective, authority), and consequences of innovations (desirable versus undesirable, direct versus indirect, anticipated versus unanticipated).

Coleman, Katz, and Menzel (1966) studied the diffusion and acceptance of a new drug among physicians. The researchers in this landmark study found two distinct patterns of diffusion. One resembled the contagion process occurring in epidemics, in other words the extremely rapid and unpredictable direction in the spreading of a disease or innovation. The second was a more constant, or methodical adoption rate among doctors who were not as well integrated into the medical community. This study was notable for demonstrating diffusion as a social process and in its focus on the role of opinion leaders in helping an innovation to achieve a critical mass point (Rogers, 1995).

Diffusion research does not center only on awareness and knowledge of an innovation. It also examines attitude change, decision making, and implementation of the innovation (Rogers & Singhal, 1996). While many of the adoption processes and categories involved in the DOI among individuals and diffusion involving organizations are different, there are also some similarities in the two approaches.

"Communication networks" is a key concept in the diffusion of innovations paradigm (Rogers, 1995). Rogers defined a communication network as consisting of "interconnected individuals who are linked by patterned flows of information" (p. 308). Interpersonal networks are an informal structure which links a system's members.

Individuals are influenced within a network by opinion leaders. Opinion leaders are persons who influence others' views about innovations (Rogers, 1995). Opinion leaders may be employed by change agents who are individuals who influence clients' innovation-decisions in a direction deemed desirable by a change agency (Rogers). Change agents are usually heterophilous towards individuals they are attempting to influence. Rogers and Kincaid (1981) wrote that heterophily is "the degree to which pairs of individuals who interact are different in certain attributes" (p. 347). Communication networks and the actors utilizing them are a part of a social system. Rogers (1995) defined a social system as " a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal " (p. 23). Members of a social system are not only individuals, the units might also be informal groups, organizations, or subsystems (Rogers).

Zaltman et al. (1973) wrote that resistance should be expected in organizations during the implementation stage of the diffusion of an innovation. This could take the form of a failure to cooperate by key employees, distrust of top administrators, and conflict if new jobs are involved. Subordinates may feel unable to express questions and fears before being forced to adopt.

Individual resistance factors include the factor of perception. In other words, both the innovation and the need must be perceived by the individual for adoption to occur (Zaltman et al., 1973). Individuals also develop comfortable habits and thus lack of motivation to adopt may be a resistance. Attitudes of individuals can be a resistance as can the illusion of an individual's sense of importance. Individuals who lack extensive interaction with others in the organization can be a resistance factor. Zaltman et al. conclude that in some instances resistance may be desirable because not all change is healthy.

Traditional theories of organization indicated that there should be high impersonality in relations between organizational participants (Zaltman et al., 1973). Interpersonal issues, however, are important in the innovation process in matters such as dealing with uncertainty. Informal groups provide important sources of information to the formal hierarchy. They also note that the innovation process can produce stress and anxiety among individuals that can destroy communication linkages if not dealt with. Interpersonal skills also have important effects on risk taking and trust. Conflict occurs throughout the innovation process and effective leaders in the organization can integrate with diverse groups (Zaltman et al.).

Albrecht and Ropp (1984) stated that innovation flourishes in organizations when information is widespread and feedback is rapid. They studied who talks about innovations with whom within organizations. They wrote that organizations that encouraged collaboration, allowed different kinds of information to flow freely, and featured coalitions, tended to have higher rates of innovation. Albrecht and Ropp noted that the research does not explain why. They concluded that people in an organization who are linked in multiple ways are less uncertain as to how others will behave. Reducing uncertainty helps facilitate discussions about new ideas.

Innovative ideas are usually not discussed among people with weak ties in an organization. Respondents in Albrecht and Ropp's (1984) study found that innovative communication ties overlapped with work and social ties.

Communication at these three levels was described as consisting of "multiplex links" (Albrecht & Ropp, 1984). Their findings suggest that discussion of innovations in organizations is facilitated by other types of personal communication. They also suggested that weak ties of organization members to those outside the organization helped to keep the system current by providing new perspectives and information. Perhaps surprisingly, overall, Albrecht and Ropp (1984) found communications about innovations to be relatively scarce even among organizations concerned about staying on the cutting edge.

Albrecht and Hall (1991) found that individuals they termed "elites" played a central role in innovation and change in organizations. They defined the "formal elite" as those in positions of formal status. They defined the "behavioral elite" as "....those who reported participating in the strategic decision-making processes either most or all of the time" (p. 536). Behavioral elite who wield power and influence often have informal status. By nature of their associational patterns, elites were found to influence the innovation process. Elites build careful relationships and that is the basis for their influence (Albrecht & Hall).

Elites are consistently more communication minded (Albrecht & Hall, 1991). They reported larger numbers of interactions across a variety of topics with other elites and outsiders. The elites' social circle is held together by both work and social contacts.

Conceptually related to elites, are the change agent and opinion leader. Rogers (1995) defined a change agent as " an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency" (p. 27). He defined opinion leaders as persons who influence others' views about innovations. Among the ways of measuring opinion leadership are the sociometric technique and the self-designating technique. The sociometric technique involves asking respondents who they sought (or hypothetically might seek) for advice or information about a topic (Rogers). The self-designating technique asks respondents to acknowledge if there is a tendency for individuals to regard them as influential.

Rogers (1995) listed several characteristics of opinion leaders. They have greater exposure to mass media than their followers. They are more cosmopolite than their followers and they have greater change agent contact than their followers. They have greater social participation and on average, the opinion leader is of higher socio-economic status than his/her followers. Rogers wrote that opinion leaders are more innovative than their followers. "*When a social system's norms favor change, opinion leaders are more innovative, but when the norms do not favor change, opinion leaders are not especially innovative*" (p. 295). The presence of opinion leaders implies that there are followers. In this study, the emphasis is on the change agent titled the "innovation champion," whose role as a catalyst and advocate in an organization was mentioned earlier. Adams (1997) studied DOI theory and the enrichment of what he called "virtual organizations" in cyberspace. He noted that Leonard-Barton (1988) stressed the importance of the innovation champion as the "implementor" in the initial stages of diffusion. Adams wrote that Rogers (1995) left the definition of "change agent" open to context, because in different organizations the person favoring new paradigms will assume different roles. Change agents develop a need for change, establish an information-exchange relationship, diagnose problems, create an intent in the client to change, translate an intent to action, stabilize and prevent discontinuance, and achieve a terminal relationship, or in other words, help the client to achieve self-reliance (Adams). Adams identified webmasters, and early adopters, as important change agents.

Among the conclusions of Zaltman et al. (1973) are that organization managers in a given situation, should consider how structural characteristics and resistance forces interact. They stated that high complexity can make implementation of an innovation difficult. They found that interpersonal relations are an important mediating variable in organizational DOI.

Research Questions:

Rogers and Shoemaker (1971) said that innovativeness is the degree to which a person adopts innovations earlier than others in a social system. Hurt, Joseph, and Cook (1977) developed a self-report technique that allows innovativeness to be measured systematically. Rogers (1995) stated that change agents help to convert an intent to change into actual action. This led to a research question.

Research Question 1:

Will ASJMC journalism and mass communication schools perceiving themselves as being leaders in Web course teaching readily identify a faculty member in their program as being an innovation champion? If so,will that faculty person score higher on innovativeness than the program's top administrator?

Individuals' involvement with an innovation, such as courses with Web features, is a critical factor in the receptivity of organization members to innovations (Johnson, Donohue, Atkin, & Johnson, 1995). Persuasion through informal channels is another key. Johnson et al. stressed that interpersonal communication channels have been found to be more useful in transmitting subject matter information that is highly complex. This led to the second research question.

Research Question 2:

Will innovation champions find that informal interpersonal communication channels rather than formal communication channels are more effective in explaining Web course features? If so, what specific interpersonal formats are most effective?

Method

This study utilized a cross-sectional survey design to assess the perceptions of college and university faculty members identified by top administrators as being innovation champions concerning the use of the Web in teaching, at 189 schools affiliated with the Association of Schools of Journalism and Mass Communication (ASJMC). Before explaining the survey process and the statistic tests used in this study, a few operational definitions are found below.

Khan (1997) wrote that "Web-based instruction (WBI) is a hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported" (p. 6). Khan listed key WBI features as including, among others, interactivity, multimedia elements, global access, an electronic publishing component, world-wide on-line resources, cross-cultural interaction, multiple expertise, industry support, and learner-control. Khan noted that additional features depended upon the quality and sophistication of the Web course designer and could include such elements as, convenience, cost-effectiveness, ease of coursework development and maintenance, formal and informal environments, and on-line evaluation.

Sutherland and Stewart (1999) stated that substantive, or formal, Web course information consists of on-line course syllabi, course readings and assignments, faculty/student discussion groups, and student course products posted-on line, or some sort of combination of the previous four items. For this research project, a course that meets in a traditional classroom but which also incorporates Web related features as instructional elements qualified as a Web course, as did courses taught entirely on-line.

Baldridge and Deal (1983) concluded that nonformal types of power and influence are important in universities. As noted earlier, change agents assist opinion leaders in the implementation of an innovation. In this study, the change agent is titled an "innovation champion" within an organization's journalism or mass communication program, and constitutes a predictor variable (Sproull, 1995). Rogers (1995) defined an innovation champion: "The champion is a charismatic individual who throws his/her weight behind the innovation, thus overcoming the indifference or resistance that a new idea often provokes in an organization" (p. 398). The existence of an innovation champion within an organization subunit such as a journalism school speaks to what Rogers (1995) and other diffusion theorists stress is the importance of interpersonal communication in the DOI process. Following guidelines established in previous DOI research on change agents (Adams, 1997, Leonard-Barton, 1988), the general traits and roles of the innovation champion were described earlier. For example, innovation champions are often perceived as implementers during initial phases of diffusion (Rogers, 1995). They are often early adopters and help the client to achieve self-reliance. He noted that the definition of a change agent should be left open to varying contexts.

For purposes of this study formal or routinized channels of communication are defined as being hierarchical and highly structured such as faculty meetings, workshops, and journal articles. Informal interpersonal channels are defined as more collegial and unstructured, such as one-on-one meetings, lounge talks.

The defining qualities of leading or "cutting edge" communication on the Internet/Web include use of multimedia, hypertextuality, packet switching, synchronicity, and interactivity (Newhagen & Rafaeli ,1996). Khan (1997) wrote that key multimedia components of Web-based instruction include text and graphics, audio streaming (such as Real Audio) and video streaming (such as Quicktime), and a graphical user interface (GUI) which uses icons, windows, graphics, and a pointing device.

Sutherland and Stewart (1999) wrote that usage of hardware and software elements such as Shockwave Flash, Perc, and/or Quicktime VR software, video conferencing, and use of a Webcam are indicative of being on the "cutting edge" in terms of educational uses of the Web. Programs did not have to use all the above elements to be included in the cutting edge category of Web usage. Change agents, or innovation champions at ASJMC institutions were asked for their perceptions as to whether their programs, and also the field in general, are doing a good job teaching students concerning the use of Web course features.

Innovativeness is the degree to which a person adopts innovations earlier than others in a social system. Hurt, Joseph, and Cook (1977) wrote that self-report techniques allow innovativeness to be measured systematically. They developed an innovativeness scale which is discussed later in this chapter. As noted earlier in this paper, change agents help convert an intent to change into actual action. Adams (1997) identified webmasters as change agents.

administrators and another was sent to faculty members. The population for the first survey questionnaire consisted of 189 administrators of the Association of Schools of Journalism and Mass Communication (ASJMC). For the second survey questionnaire, targeting faculty change agents (innovation champions), the sample consisted of 100 faculty utilizing Web features in courses at ASJMC schools. See Appendix A for the survey instruments.

ASJMC is an association which was a co-founding affiliate of the Association for Education in Journalism and Mass Communication (AEJMC). ASJMC members work at both accredited and nonaccredited programs. One of the main goals of ASJMC is to promote leadership and excellence and to "....promote inquiry into the changing nature of higher education curricula and the proper role therein of journalism and mass communication...." (ASJMC Mission and Goals, 1991, p. 3).

This study's focus was on various perceptions by faculty members and administrators at ASJMC schools using the Web in teaching. Perceived innovativeness was examined at the individual level (Hurt, Joseph, & Cook, 1977). The primary unit of analysis in this study was at the individual level. Due to the relatively small number of ASJMC member programs, it was feasible to contact all of the 189 active ASJMC Administrators. A 1999-2000 ASJMC membership mailing list of 201 members was obtained from the ASJMC Headquarters. It was determined that six members on the mailing list were no longer active in academia and they were not surveyed. Six others on the ASJMC mailing list held administrative positions lower in the administrative hierarchy at the ASJMC programs. They were not surveyed in order to avoid programs from replying more than once. This population was selected on the basis of the membership's mission and goals of excellent performance and programs beyond the minimal. ASJMC schools are committed to maintaining high standards in journalism and mass communication education.

Participant schools were categorized using the 1994 Carnegie Foundation for Teaching classification system for national universities and selective liberal arts colleges as a guide (ASJMC schools that are categorized as regional programs under the 1994 Carnegie system are not classified in the national Carnegie system, therefore, the regional ASJMC programs were included with non-Carnegie category schools). At about three-quarters of the way through the survey, the Carnegie Foundation introduced their year 2000 higher education classification system.

Instrumentation

Rogers (1995) wrote that surveys are the primary research method in DOI studies. Three instruments were used in this study to collect data necessary to address the research questions : indices and a numerical rating scale (Guilford 1954, Miller 1977, Stamm 1989, Sproull 1995, Watt and van den Berg (1995), Hurt, Joseph, and Cook's (1977) scale on the measurement of innovativeness, and a demographic survey. The survey was constructed utilizing multiple measures and with a few open ended items (Babbie, 1986 and Williams, 1992). Survey instructions specified that respondents could provide additional information, if they chose, to any question on the survey. A review of the literature, on perceptions of the Web by administrators and college teachers, did not identify use of a widely accepted scale for measurement of the sophistication of Web course features as an innovation. Therefore, a series of simple indices and composite indexes were developed to measure variables such as perceived needs, imperatives, resistances and pressures to implementation of Web courses. Response choices along a continuum of strongly disagree, disagree, neutral, agree, and strongly agree with numerical weights of 1 through 5 were used. Watt and ven den Berg (1995) stated that such semantic differential scales (Likert type) are sufficient to meet measurement demands for a majority of communication studies. Sproull (1995) stated that numerical rating scales are used often in research to measure factors such as perceptions and/or performance of people or products.

Measurement of Innovativeness Scale

An existing true scale for measurement of innovativeness (Hurt, Joseph, & Cook, 1977) was utilized to measure the role of an "innovation champion" in the DOI process of Web courses in journalism and mass communication. The 20-item survey instrument used a five point scale ranging from 1-5, strongly disagree, disagree, neutral, agree, and strongly agree. Hurt, Joseph, and Cook also developed a 10-item short scale to measure innovativeness at the individual level.

Demographic Survey and Open Ended Questions

Data were collected from ASJMC program top administrators and from faculty members using Web features in courses. The innovativeness scales were included in the surveys of both administrators and of faculty. Forced choice items were presented in areas such as; gender, age, educational level, number of years as administrator or faculty member, and the estimated year that the ASJMC program started using Web course features. Also, respondents were asked to complete an open ended question on the survey. The first e mail survey, targeting ASJMC Administrators, was preceded by an introductory letter explaining the research project and providing a few key operational definitions. It was sent directly to the administrators early in summer of 2000. Upon receiving the responses from that self-administered survey, a second questionnaire, targeting faculty was e mailed in mid-to late summer of 2000, to the designated "innovation champions" at the respective ASJMC institution. This survey was also self-administered. Not all data gathered in this survey directly related to the two research questions, however, the additional data did provide an overall view as to how faculty innovation champions viewed the implementation progress of the innovation of Web course features. For example, innovation champions were asked for their perceptions as to whether their programs, and also the field in general, are doing a good job teaching students concerning the use of Web course features.

Data Analysis Overview

Descriptive statistics were used in this study since the researcher is concerned with the overall characteristics of the ASJMC data (Williams, 1992). This included measures of central tendency such as means, modes, and medians and measures of dispersion or variability, such as range, variance and standard deviation (Watt & van den Berg, 1995). Results were presented in terms of percentages and averages. Types of statistical tests that were utilized included chi-square, analysis of variance, and t tests.

Results

The first survey questionnaire was sent to top administrators at 189 ASJMC programs. Responses were obtained from 137 administrators (72%). Table B1 in Appendix B provides comparisons of sample and population percentages for the seven Carnegie-based categories of institutions included in this study. To determine if the obtained sample differed from the population, a chi-square test for independence was used.

The seven institution categories, adopted from the 1994 Carnegie Foundation for Teaching scheme for national universities and selective liberal arts colleges, were collapsed into three categories because of small cells. "Research II" was combined with "Research I" for the first category. "Doctoral II" was combined with "Doctoral I" for the second. And "Liberal Arts" and "Outside the U.S." were combined with the "Non-Carnegie" category. The computed value of chi-square (3.36) showed that the sample did not differ markedly from the population [X^2 (2, N = 189) = 3.36, $p > .186$].

Top administrators at ASJMC schools who responded were predominantly male: 100 (73%) of the 137 respondents were men. The average age of the administrators was 53 years old. The youngest administrator was 31 years old and the oldest was 67 years old. ASJMC top administrators who responded averaged 9.2 years in their position. But roughly a fourth (28%) averaged 3 years or less and 43% were in their position 5 years or less. Only 36% had more than 10 years of experience in their position.

Summaries of Perceived Web Leadership and Presence of Innovation Champion

As a prelude to answering Research Question 1 about whether schools perceiving themselves as leaders in Web course teaching could identify an innovation champion on their faculty, it was necessary to ascertain which program administrators do see their programs as leaders. Asked whether they considered their program to be a leader in Web instruction, a total of 32 administrators (24%) answered "yes." A total of 101 administrators (76%), answered "no," they did not see their programs as leaders. Asked if they could identify an innovation champion on their faculty, 109 (81%) of the 135 respondents answered yes. Therefore, the answer to Research Question 1 is affirmative, administrators readily identified innovation champions. There were 26 administrators who could not identify an innovation champion.

Administrator Survey Innovativeness Traits Scale Summary

The questionnaire contained a block of statements making up the short version (10 questions) of the innovativeness traits scale (Hurt, Joseph and Cook, 1977). In order to build the foundation for answering Research Question 1 about administrators' innovativeness compared to faculty innovation champions, responses are reported in Table B2 in Appendix B.

The responses to the block of innovativeness items paint ASJMC administrators as being open to and challenged by intellectual ferment. As a group, they seem receptive to implementing new ways of doing things. The item generating the most agreement (89%) from administrators concerned being stimulated by original thinking. Nearly eight out of 10 administrators also agreed that they are challenged by unanswered questions (81%) and by ambiguities (77%). The administrators showed strong disagreement (92%) with the statement about rarely trusting new ideas until most others accept them. They do not perceive themselves as being overly cautious about accepting new ideas (70% disagreed). And 62% disagreed that they are skeptical of new ideas.

Innovation Champion Survey Demographic Item Summaries

The second national survey targeted innovation champions on the faculty at ASJMC programs identified by administrators in the first survey. The sample size was 100, and 74 faculty returned questionnaires for a response rate of 74%. As with the administrator survey results, the respondents were mostly men. Over two-thirds (71%) of the respondents to the innovation champion questionnaire were male. The average age of the innovation champions was 46.7 years old, seven years younger than the average administrator age (53 years). The youngest faculty member was 27 years old and the oldest was 68 years old. Innovation champions averaged 9.8 years in their present teaching position, which closely resembled administrators' average time at their position (9.2 years). Three quarters (75%) of the innovation champions had been at their present position for at least four years or more. Just under 10% had the least amount of experience recordable, one year at their position. Some 11% of the innovation champions had been in their position for over 20 years, with the longest time in the position being 33 years.

Faculty identified as innovation champions generally had substantial professional experience, with an average of 14.2 years in the journalism and mass communication field. Nine out of 10 innovation champions had at least five years of professional experience, and close to a third of the innovation champions (30%) had between 20 and 37 years of professional experience. Nearly 7 out of 10 (68%) of the faculty innovation champions held a doctorate degree. This is lower than the rate of 83% of administrators holding a doctorate. Some 90% of those innovation champions held the Ph.D., while 6% held the juris doctorate, and the remainder held the doctorate in education. A quarter of the innovation champions (25%) held a master's degree, and the remaining 7% had earned a bachelor's degree. Over one-third (37%) of the faculty innovation champions held the academic rank of associate professor. The next most common rank was full professor at

29%. About a quarter of the innovation champions (24%) were assistant professors. The remainder consisted of instructors (7%) and lecturers (3%).

Innovation Champion Survey Innovativeness Traits Statements Summary

Table B3 summarizes the results of innovation champions' innovativeness traits and helps to answer Research Question 1 in that faculty innovation champions are more innovative than administrators. Innovation champions believe they adopt innovations earlier. They see original thinking and behavior as stimulating (91%) and 94% of the innovation champions do not wait for the majority of others to trust new ideas before they accept them. See Table B4 for a comparison of administrator and innovation champion scores on innovativeness.

Types of Communication Channels Used to Explain Web Course Features

Recall that these innovation champions were identified by their program administrators. If indeed these innovation champions are leaders, there arises the question of how they facilitate change among others. Eight of 10 survey respondents (81%) viewed informal channels of communication such as one-on-one meetings and lounge talks as useful and effective in explaining complex Web course features. Fewer than five of 10 innovation champions viewed formal channels of communication, such as faculty meetings and workshops, as useful and effective in explaining Web features. See Appendix C Table C1 for a summary. Thus, the answer to Research Question 2 is yes, faculty innovation champions do see informal channels of communication as more effective in explaining Web course features to others.

The questionnaire inquired about specific interpersonal formats that innovation champions found effective for discussing Web innovations. The one-on-one meeting (90%) was considered the most effective communication format. Innovation champions also cited small group discussions (77%) as effective, and 70% cited the formal channel format of teaching and research conferences/workshops as effective ways to exchange Web course information. E- mail correspondence was cited as effective by about half of the respondents (53%).

Innovation champions identified some communication channels as being ineffective. Regular mail was seen as being ineffective by 47% of the respondents, with faculty and committee meetings viewed as ineffective by 43% and 37% of the innovation champions respectively. See C2 in Appendix C.

Overall Perceptions of How Well the Field and Particular ASJMC Programs Are Doing Teaching Students With Courses Using Web Features

Using a five-point answer (strongly disagree, disagree, neutral, agree, and strongly agree), the innovation champion survey questionnaire items measured perceptions of individual program performance and the performance of the journalism and mass communication field in general, in terms of teaching students using Web features. Responses were collapsed into three options: disagree, neutral, and agree. Half of the innovation champions (50%) agree that their program is doing a good job teaching students by using Web course features (See Table C3). About one-third (37%) disagree. For the field overall, however, the views of the innovation champions are quite different compared to perceptions of their own programs. Close to half of the innovation champions (47%) were neutral on whether the field of journalism and mass communication is doing a good job of teaching students using Web course features. Four out of 10 disagree and only 12% agree that the field is doing a good job.

Discussion

Concerning Research Question 1, it was determined that ASJMC administrators readily identified innovation champions on their faculty and that innovation champions, on the whole, are more innovative than top administrators. The findings comparing administrators and innovation champions on innovativeness traits resulted in differences on two items. Innovation champions were less reluctant than administrators to adopt new things until they see them working for others. And innovation champions perceived themselves as less likely, when compared with administrators' views, to be one of the last people in their group to accept something new. Overall, however, administrator and innovation champion scores on the remaining measures appeared to be fairly close.

Hurt, Joseph, and Cook (1977) stated that the innovativeness scale was designed to measure individuals' willingness to change. For this study on Web course features implementation, innovation champions were found to be more innovative. This supported Rogers' (1995) view on innovativeness personality trait generalizations. Rogers wrote that difficulties in measuring personality dimensions have resulted in personality variables associated with innovativeness needing more research attention. The results from this study may make a small contribution to DOI theory pertaining to innovativeness traits.

Innovation champions see themselves as earlier adopters and according to Rogers (1995), this indicates that they tend to think imaginatively and have the ability to take on the roles of heterophilious others so that they can be effective in exchanging information with them. Innovation champions working with Web course features may be less dogmatic than other adopters. In other words, these faculty tend to welcome new ideas. Innovation champions, as early adopters, are respected by their peers and embody the successful use of new ideas. These faculty have a more favorable attitude toward change and are able to deal with risk and uncertainty better than later adopters. In terms of communication behavior, Rogers (1995) wrote that earlier adopters tend to be more highly connected in interpersonal networks than later adopters. They tend to have more knowledge about innovations than do others and they seek out information more actively. What this means for administrators who are uncertain of who might be an innovation champion on their faculty is that the implementation of Web course features at their program may be proceeding slowly because change agents (innovation champions) working for administrators, probably are not being fully utilized. Before implementing an innovation, the top decision makers should seek and evaluate feedback frequently (Zaltman et al., 1973).

Research Question 2 read "Will innovation champions find that informal interpersonal communication channels rather than formal communication channels, are more effective in explaining Web course features? If so, what specific interpersonal formats are most effective?" Innovation champion survey results showed that interpersonal communication is viewed as more useful and effective (8 of 10 agree) than formal (routinized) communication (less than 5 in 10 agree) in explaining complex Web course features. Nine out of 10 of the innovation champions agreed that one-on-one meetings were the most effective format, followed by 8 of 10 of the innovation champions viewing casual small group meetings as effective.

The innovation champion survey addressed the theoretical component of communicability. In other words, Leonard-Barton (1988) wrote, it is important for the technology's operating principles to be successfully communicated to individuals other than its developers. While the focus of this research project was not on the interpersonal aspects of DOI, per se, DOI theory stresses the importance that change agent contact and communication play in diffusion. Innovation champions found informal interpersonal communication, such as one-on-one meetings and small group discussions, to be the most effective ways to explain Web course features to colleagues.

This finding is theoretically significant because Rogers (1995) and other DOI theorists such as Zaltman et al. (1973) stress the importance of interpersonal communication in the diffusion process. Rogers wrote that communication network analysis is a complex and under-studied area of DOI research. This aspect of DOI helps to illustrate communication structure which Rogers noted was "invisible." Rogers noted that for change agents such as innovation champions in this study, the type of personal communication networks that they operate within are important elements in achieving change.

In a small way, this study may add useful information to the existing literature supporting the importance of interpersonal communication in DOI. The findings on specific communication formats seen as effective in conveying information on Web course features, should be useful to both administrators and to innovation champions, in terms of both confirming formats already seen as effective and through identification of the most effective communication vehicles. Rogers (2000) stated that DOI scholars should be investigating the human interactions with new media technologies and the social consequences of interactive technologies.

Limitations of the Study

While most innovation studies do use the survey as the primary method for gathering data, observing change in the innovation over a period of time would be more systematic (Van de Ven and Rogers, 1988). Relying on administrators' recollections of dates that their programs began implementing Web course features is limiting. It is limiting because no other collaborating records are presented, such as college catalog listings of such courses. The sample sizes, especially of the innovation champions, were relatively small in this study. The samples were not randomly selected. Because there are differences in individual DOI theory and organizational DOI theory, using individuals' perceptions as the unit of analysis, without also using organizational records or personal observations and/or in-depth interviews, can be seen as a limitation of the methodology.

Implications for Future Research

Future research in this area might broaden the population of schools surveyed to include for example, community colleges, a broader representation of institutions represented in the new Carnegie 2000 classification scheme, and more overseas programs that offer journalism and mass communication.

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Appendix A

Administrator Survey

INSTRUCTIONS-

Please complete the demographic information and then the nine item questionnaire below. Information about you and your specific program will be kept confidential.

__ Check here if you would like to be sent the results of this survey.

DEMOGRAPHIC INFORMATION-(Mark with an "X" in appropriate space).

(01)-Region of the U.S. that your school is located:

__ New England __ Mid-Atlantic __ Midwest __ West
__ South __ Hawaii __ Alaska __ Other: (Specify):

(02)-Type of Institution:

___Research I ___Research II ___Doctoral I ___Doctoral II
___Liberal Arts

(03)-Gender:

___ Male ___ Female

(04)-Age:

___ Years

(05)-Time at present position:

___ Year(s)

(06)-Highest degree obtained:

___ Ph.D. ___ Ed.D. ___ Masters ___ Other-Please specify:__________

QUESTIONS:

(07)-Year your program started offering courses with any Web features?

_____ Specify the year please
_____ No courses with any Web features are offered

INSTRUCTIONS FOR REMAINING QUESTIONS-

Place the appropriate numeral from the key in the space provided before each item under the questions below. You may provide additional information by writing under "Comments."

ASJMC Web Use Survey-Page Two

KEY FOR ITEM #08 BELOW:

1= Strongly disagree
2= Disagree
3= Neutral
4= Agree
5= Strongly agree

(08)-From the list of organizational culture characteristics below, to what extent does the item describe your program's culture?

__ The program is always changing, shifting, transforming.
__ The program is vulnerable to outside pressures.
__ The goals of the program often seem ambiguous.
__ Students exert considerable influence in program decision making.
__ Program strategies and policies concerning use of the Web are clear.
__ Faculty that I see as experts in Web course teaching demand autonomy.
__ With faculty using the Web in courses, a tension exists between professional values and administrative expectations.
__ Faculty using the Web in their courses expect peer evaluation of their Web course work.
__ Other(s): Please specify.

KEY FOR ITEM # 09 BELOW:

1= Strongly disagree
2= Disagree
3= Neutral
4= Agree
5= Strongly agree

(09)-To what extent does each item below describe the implementation process in your program regarding courses with Web features?

__ There has been dissatisfaction with the Web course status quo.
__ The program's faculty/staff have the required knowledge and skills related to Web course development.
__ Adequate resources are available for Web course development.
__ There is adequate time to implement Web courses.
__ Rewards and/or incentives are in place for Web course faculty participants.
__ The program expects active participation in the adoption of Web courses.
__ There is a commitment by faculty involved in Web courses.
__ Leadership in Web course development is shown by the top administrator and by the Web project leader on a daily basis.

Comment(s):

CONFIDENTIALITY REMINDER: Names of individuals and institutions will be kept confidential by the researcher.

ASJMC Web Use Survey-Page Three

(10)-Do you see your program as a leader in Web course offerings?

__ Yes
__ No

(11)-Can you identify a faculty member in your program as being a change agent, also called an innovation champion (advocate/catalyst), for Web courses?

__ Yes
__ No

If you answered yes, please provide the person's name and e mail address:______________________________

KEY FOR ITEM # 12 ON PAGE FOUR:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

(12)-Indicate to what extent you agree with each of the statements below (Hurt, Joseph, & Cook 1977).

__ 1. I am generally cautious about accepting new ideas.
__ 2. I rarely trust new ideas until I can see whether the vast majority of people around me accept them.
__ 3. I am aware that I am usually one of the last people in my group to accept something new.
__ 4. I am reluctant about adopting new ways of doing things until I see them working for people around me.
__ 5. I find it stimulating to be original in my thinking and behavior.
__ 6. I tend to find the old way of living and doing things is the best way.
__ 7. I am challenged by ambiguities and unsolved problems.
__ 8. I must see other people using new innovations before I'll consider them.
__ 9. I am challenged by unanswered questions.
__ 10. I often find myself skeptical of new ideas.

KEY FOR ITEM # 13 BELOW:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

(13)-From the items listed below, to what extent do you think that the item is a constraint/resistance in your program towards implementing the Web in courses?

__ Assessment difficulties with Web course education
__ Complexities of system wide adjustment to Web courses
__ Decreased teacher immediacy of Web courses
__ Funding concerns for Web course hardware or software
__ Lack of published research on Web course effectiveness
__ Lack of promotion/tenure for teachers already using the Web
__ Lack of strategic planning for Web course learning
__ Lack of knowledge on alternative teaching such as on Web
__ Perceived need to hire more personnel to service courses
__ Plagiarism concerns
__ Staff resistance to Web technology
__ Teacher resistance to Web technology
__ Time drain on faculty using Web courses in terms of designing/maintaining the Web course
__ Other(s): Please specify

Comment(s):

KEY FOR ITEM # 14 BELOW:

1= Very unimportant
2= Unimportant
3= Neutral
4= Important
5= Very important

(14)-From the list of items below, to what extent do you think that the item constitutes a need to implement the Web into your courses?

__ Accreditation agency expectations
__ Active learning component of Web courses
__ Adaptive aspects of the Web for future innovations
__ Adult learner demands for Web courses as lifetime learning
__ Combat professional isolationism with Web colleagues
__ Competitive forces that offer extensive Web courses
__ Convenience of access on-line
__ Cost effectiveness of Web courses
__ Empowerment of students for directing own learning
__ Employers' demands for graduates to have Web experience
__ Global scope of the Web broadens outlooks and resources
__ Increased class participation through Web activities
__ Increased learner satisfaction
__ Interactive materials available on the Web
__ Interdisciplinary approach to knowledge via the Web
__ Perception of the Web as an essential program
__ Prestige that Web courses can bring programs
__ Profit pressures on universities to use the Web for $ gain
__ Recruitment of students outside geographical area on the Web
__ Research and development opportunities over the Web
__ Self-paced learning options for students using the Web
__ Other(s): Please specify

Comment(s):

(15)-From my past and present experiences in adopting and implementing Web courses, I'd like to share this comment(s) about the Web innovation with administrators and/or faculty.

Comment(s):

Return this survey by using the enclosed self-addressed, stamped envelope. Thank you again for participating in this survey concerning Web courses at ASJMC Programs.

Innovation Champion Survey

QUESTIONS:

(01)-Approximately how many courses with Web features does your journalism/communication program offer per year?

___ 0
___ 1-4
___ 5-8
___ 9-12
___ 13+

Comment(s):

(02)-In the course(s) with Web features that are offered in your program, please indicate with an "X," whether your course(s) offer the following:

___ Animated GIFs
___ Audio streaming
___ Compression technology
___ Conferencing tools
___ Entire course is offered on-line: Please specify course name(s):__________
___ Internet navigation tools (access to databases) such as Gopher, Lynx
___ Links to multimedia content relevant to the course topic
___ Reading assignments on-line
___ Remote access tools such as Telnet, File Transfer Protocol (FTP), etc.
___ Student produced course products on-line
___ Syllabus on-line
___ Testing on-line
___ Video streaming
___ Other: (Specify):________

Comment(s):

KEY FOR ITEM #03 BELOW:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

(03)-

___ My program is doing a good job of teaching students in terms of the program using Web course features related to the field.

Comment(s):

KEY FOR ITEM #04 BELOW:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

(04)-

___ The journalism and mass communication field is doing a good job of teaching students in terms of programs using Web course features.

Comment(s):

KEY FOR ITEM #05 BELOW:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

(05)-To what extent does each item below describe the implementation process in your program regarding courses with Web features?

___ There has been dissatisfaction with the Web course status quo.
___ The program's faculty/staff have the required knowledge and skills related to Web course development.
___ Adequate resources are available for Web course development.
___ There is adequate time to implement Web courses.
___ Rewards and/or incentives are in place for Web course faculty participants.
___ The program expects active participation in the adoption of Web courses.
___ There is a commitment by faculty involved in Web courses.
___ Leadership in Web course development is shown by the top administrator and by the Web project leader on a daily basis.

Comment(s):

KEY FOR ITEM #06 BELOW:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

(06)-Indicate the extent of your agreement with each of the statements below (Hurt, Joseph, & Cook 1977).

___ I am generally cautious about accepting new ideas.
___ I rarely trust new ideas until I can see whether the vast majority of people around me accept them.
___ I am aware that I am usually one of the last people in my group to accept something new.
___ I am reluctant about adopting new ways of doing things until I see them working for people around me.
___ I find it stimulating to be original in my thinking and behavior.
___ I tend to find the old way of living and doing things is the best way.
___ I am challenged by ambiguities and unsolved problems.
___ I must see other people using new innovations before I will consider them.
___ I am challenged by unanswered questions.
___ I often find myself skeptical of new ideas.

Comment(s):

KEY FOR ITEM #07 BELOW:

1 = Very ineffective
2 = Ineffective
3 = Neutral
4 = Effective
5 = Very effective

(07)-Rate the overall usefulness of the communication channel types below, in terms of your experience(s), as to their effectiveness in helping you to explain complex Web course features to others:

___ Formal routinized channels (e.g., faculty meetings, workshops, articles)
___ Informal interpersonal channels (e.g., one-on-one meetings, lounge talks)
___ Other(s): Specify:

Comment(s):

KEY FOR ITEM #08 BELOW:

1 = Very ineffective
2 = Ineffective
3 = Neutral
4 = Effective
5 = Very effective

(08)-Rate each communication format below in terms of what you perceive as being, in your experience, their effectiveness in helping you to explain to colleagues how and why to use Web course features (such as those specified in (02) above):

___ Academic articles
___ Casual small group discussions
___ Committee meetings
___ Electronic mail correspondence
___ Faculty meetings
___ Listserve postings
___ Mass media presentations on Web features
___ One-on-one personal meetings
___ Regular mail correspondence
___ Teaching/research conferences/workshops
___ Telephone conversations
___ Trade magazines
___ Other(s): Specify:

Comment(s):

(09)-From your past and present experiences in adopting and implementing courses with Web features, please share your thoughts about what has contributed to either problems, or to successes, in your teaching.

Comment(s):

DEMOGRAPHIC INFORMATION-

(10)-Gender:

___ Male
___ Female

(11)-Age:

___ Years

(12)-Time at present teaching position:

___ Year(s)

(13)-Years of professional experience:

___ Year(s)

(14)-Highest degree obtained:

___ Ph.D.
___ Ed.D.
___ Masters
___ Bachelors
___ Other-Please specify:__________

(15)-Academic rank:

___ Professor
___ Associate Professor
___ Assistant Professor
___ Instructor
___ Lecturer
___ Other: Please specify:__________

Thank you again for participating in this survey concerning Web course features at ASJMC Programs. Your confidentiality will be maintained.

My e mail addresses are PatWVBC@aol.com, or p.sutherland@mail.bethanywv.edu, or Patrick_Sutherland@hotmail.com I can be reached by telephone at 304-829-4860. My mailing address is P.O. Box 536 Bethany, WV 26032.

Appendix B

Table B1

Institution Type in Numbers and Percentages

Institution Type	N and P in ASJMC Population		n and Total P of Sample	
Research I	40	(21.2)	30	(21.9)
Research II	22	(11.6)	18	(13.1)
Doctoral I	15	(7.9)	12	(8.8)
Doctoral II	12	(6.3)	10	(7.3)
Liberal Arts	4	(2.1)	4	(2.9)
Non-national Carnegie	89	(47.1)	60	(43.8)
Outside U.S. Non-national Carnegie	7	(3.7)	3	(2.2)
Totals	189	100.0	137	(100.0)

Table B2

Administrator Survey Innovativeness Traits Percentages, Means and Standard Deviations

Statement	P					
	SD (1)	D (2)	N (3)	A (4)	SA (5)	M (SD)
1. I am generally cautious about accepting new ideas.	24.6	45.5	14.9	13.4	1.5	2.22 (1.01)
2. I rarely trust new ideas until I can see whether the vast majority of people around me accept them.	39.6	52.2	5.2	2.2	.7	1.73 (.73)
3. I am aware that I am usually one of the last people in my group to accept something new.	55.2	35.8	3.7	2.2	3.0	1.62 (.90)

table continues

Table B2 con't

Administrator Survey Innovativeness Traits Percentages, Means and Standard Deviations

Statement	P					
	SD (1)	D (2)	N (3)	A (4)	SA (5)	M (SD)
4. I am reluctant about adopting new ways of doing things until I see them working for people around me.	32.8	51.5	8.2	6.7	.7	1.91 (.86)
5. I find it stimulating to be original in my thinking and behavior.	2.2	.7	8.1	49.6	39.3	4.23 (.81)
6. I tend to find the old way of living and doing things is the best way.	29.1	34.3	26.1	8.2	2.2	2.20 (1.02)
7. I am challenged by ambiguities and unsolved problems.	3.7	3.7	14.8	51.9	25.9	3.93 (.94)

table continues

Table B2 con't

Administrator Survey Innovativeness Traits Percentages, Means and Standard Deviations

Statement	P					
	SD (1)	D (2)	N (3)	A (4)	SA (5)	M (SD)
8. I must see other people using new innovations before I'll consider them.	33.1	50.4	12.0	3.8	.8	1.89 (.81)
9. I am challenged by unanswered questions.	2.2	4.4	11.9	50.4	31.1	4.04 (.90)
10. I often find myself skeptical of new ideas.	20.1	41.8	20.1	12.7	5.2	2.41 (1.11)

Note. n = 133-135. SD = Strongly disagree (1), D = Disagree (2), N = Neutral (3), A = Agree (4), SA = Strongly agree (5).

Table B3

Innovation Champion Innovativeness Traits Scale Percentages of Agreement and Disagreement

Statement	P				
	SD	D	N	A	SA
1. I am generally cautious about accepting new ideas.	39.4	36.6	7.0	9.9	7.0
2. I rarely trust new ideas until I can see whether the vast majority of people around me accept them.	49.3	45.1	4.2	- -	1.4
3. I am aware that I am usually one of the last people in my group to accept something new.	76.1	18.3	4.2	- -	1.4
4. I am reluctant about adopting new ways of doing things until I see them working for people around me.	60.6	31.0	7.0	1.4	- -
5. I find it stimulating to be original in my thinking and behavior.	1.4	2.9	4.3	31.4	60.0
6. I tend to find the old way of living and doing things is the best way.	31.0	40.8	22.5	4.2	1.4
7. I am challenged by ambiguities and unsolved problems.	2.8	2.8	14.1	40.8	39.4

table continues

Table B3 con't

Innovation Champion Innovativeness Traits Scale Percentages of Agreement and Disagreement

Statement	P				
	SD	D	N	A	SA
8. I must see other people using new innovations before I'll consider them.	49.3	38.0	5.6	4.2	2.8
9. I am challenged by unanswered questions.	5.6	2.8	8.5	40.8	42.3
10. I often find myself skeptical of new ideas.	28.6	47.1	11.4	8.6	4.3

Note. n = 70-71. SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree.

Table B4

Comparison of Administrator and Innovation Champion Innovativeness Traits Means and Standard Deviations

Statement	Administrators		Innovation Champions		t Critical Value (p)
	M	SD	M	SD	
I am generally cautious about accepting new ideas.	2.22	1.01	2.08	1.23	-- --
I rarely trust new ideas until I can see whether the vast majority of people around me accept them.	1.73	.73	1.59	.71	-- --
I am aware that I am usually one of the last people in my group to accept something new.	1.62	.90	1.32	.69	2.66 2.57 (p = .01)

table continues

Table B4 con't

Comparison of Administrator and Innovation Champion Innovativeness Traits Means and Standard Deviations

Statement	Administrators		Innovation Champions		t Critical Value (p)
	M	SD	M	SD	
I am reluctant about adopting new ways of doing things until I see them working for people around me.	1.91	.86	1.49	.69	3.79 3.29 (p = .001)
I find it stimulating to be original in my thinking and behavior.	4.23	.81	4.46	.83	-- --
I tend to find the old way of living and doing things is the best way.	2.20	1.02	2.04	.92	-- --

table continues

Table B4 con't

Comparison of Administrator and Innovation Champion Innovativeness Traits Means and Standard Deviations

Statement	Administrators		Innovation Champions		t Value	Critical (p)
	M	SD	M	SD		
I am challenged by ambiguities and unsolved problems.	3.93	.94	4.11	1.06	--	--
I must see other people using new innovations before I will consider them.	1.89	.81	1.73	.95	--	--
I am challenged by unanswered questions.	4.04	.90	4.11	1.06	--	--
I often find myself skeptical of new ideas	2.41	1.11	2.13	1.06	--	--

Note. n for Administrators = 33 to 135, n for Innovation Champions = 70 to 71.
1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Appendix C

Table C1

Useful/Effective Communication Channels in Explaining Web Course Features

Communication Channel Type	P				
	SD	D	N	A	SA
Formal routinized channels (a).	5.5	26.0	23.3	39.7	5.5
Informal interpersonal channels (b).	2.7	2.7	13.7	46.6	34.2
Other:(c).					

Note. n = 73. (a). Formal channels were defined as routinized communication such as faculty meetings, workshops, and articles. (b). Informal channels were defined as interpersonal such as one-on-one meetings, and lounge talks. (c). Eight respondents checked the "Other" option and the specific type of communication channels they mentioned follow. One respondent mentioned seeing results on-line and hearing about them from students. Another listed samples on the Web and another respondent cited viewing others' Web pages. One respondent listed e mail, class listserves and chat groups as communication channels. Another listed ZDTV and related technical publications both on-line and in print as communication channels. One respondent wrote in campus wide seminars as a channel. Another stated that hands on training is the best. Finally, one respondent said he/she used calls on the phone and e mail as communication channels.

Table C2

Communication Formats' Effectiveness in Explaining Web Course Features

Communication Format	n	P				
		VI	I	N	E	VE
Academic articles	71	16.9	22.5	35.2	19.7	5.6
Casual small group discussions	71	- -	2.8	19.4	58.3	19.4
Committee meetings	71	15.5	21.1	26.8	31.0	5.6
Electronic mail correspondence	71	5.6	15.5	25.4	46.5	7.0
Faculty meetings	72	18.1	25.0	26.4	27.8	2.8
Listserve postings	71	11.3	14.1	42.3	26.8	5.6
Mass media presentations on Web features	71	8.5	21.1	35.2	29.6	5.6
One-on-one personal meetings	72	1.4	1.4	6.9	34.7	55.6
Regular mail correspondence	70	25.7	21.4	38.6	11.4	2.9
Teaching/research conferences/ workshops	71	1.4	7.0	21.1	54.9	15.5
Telephone conversations	71	12.7	8.5	42.3	31.0	5.6
Trade magazines	70	10.0	12.9	44.3	27.1	5.7

Note. VI = Very ineffective, I = Ineffective, N = Neutral, E = Effective, VE = Very effective.

Table C3

Summary of How Innovation Champions View Their Program, and the Field Overall, As Doing Using Web Course Features in Teaching

Statements	P		
	Disagree	Neutral	Agree
My program is doing a good job of teaching students in terms of the program using Web course features related to the field.	37.1	12.9	50.0
The journalism and mass communication field is doing a good job of teaching students in terms of programs using Web course features.	40.9	47.0	12.1

Note. n = 69, and 65 respectively.

A Communication "Mr. Fit?" Living with No Significant Difference

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A Communication "Mr. Fit?" Living with No Significant Difference

Abstract

This methodological report addresses internal validity problems including contamination and randomization. It profiles an empirical study and examines the methodological soundness of decisions made. Focusing on the science of research is as important as focusing on the theoretical constructs guiding research.

Key Words
Methodology
Internal validity

A Communication "Mr. Fit?" Living with No Significant Difference

Researchers strive for careful control over research conditions in their research design in order to rule out plausible but incorrect explanations of results and demonstrate the relationship between a specific variable(s) on another variable(s). Variables or conditions that create such plausible but incorrect explanations are artifacts or research flaws. Their presence indicates that the results of a study are not due to the treatments posited but to a lack of internal validity. Unexpected results or lack of significant differences often accompany this phenomenon. The present study is a report of one such study and the lessons learned are comparable to those which serve to advance the science of research.

A well-known epidemiological study on primary intervention in coronary heart disease is the multiple risk factor intervention trial or the acronymized MRFIT (Multiple Risk Factor Intervention Trial Research Group, 1982). It is referenced in basic epidemiology texts (Brownson, Remington and Davis, 1998; Elwood, 1998; Goudis, 2000) as an example of the internal validity problem of contamination or dilution (Cook & Campbell, 1979).

Funded by the National Heart, Lung and Blood Institute, the study was a randomized primary prevention trial which tested a multi-factor intervention program on coronary heart disease (CHD) prevention among 12,866 high-risk men aged 35 to 57 years. Beginning in 1973, risk factor levels were tracked over a seven-year period among two groups -- men randomly assigned to a special intervention program comprising hypertension treatment, smoking cessation counselling and dietary advice and those receiving the usual sources of community health care. The study involved 22 clinical centers, a coordinating center, a laboratory center, a laboratory standardization center and two electrocardiography centers.

At the end of the invention trial, risk factor declines were observed in the intervention group as well as in the control group. No significant differences were found in CHD mortality between the two groups. The results were unexpected and the researchers suggested three possibilities: 1) the intervention program did not affect CHD mortality, 2) the intervention did affect CHD mortality, but the trial period was not long enough for the benefit to be observed, and 3) the measures used may have reduced CHD mortality within subgroups but not all groups (Multiple Risk Factor Intervention Trial Research Group, 1982).

The third explanation has been further investigated. With such a large-scale data set, sub group analyses are not only possible but productive in identifying trends and developments. To date, the National Library of Medicine's medical publication database MEDLINE records a total of 188 studies reporting on risk factor outcomes in various subgroups ranging from men with arteriosclerosis to those with systolic blood pressure and Type A personalities.[1] In addition, researchers and scholars (Brownson, Remington & Davis, 1998; Elwood, 1998; Goudis, 2000) have observed that during the intervention trial, the control group obtained similar information about coronary heart disease information for themselves. In contrast, the intervention group had been specially provided with this same information by MRFIT researchers. As a result, contamination occurred and the control group did not function as a control group. This raises the question, when is a control group a control group?

Experimental Design

Through experimental design, researchers designate a group of respondents as a control group. This is a group that does not receive any treatment in comparison to an experimental group which does, so that causal relationships can be established between test variables and their effects. In the course of the study, control group respondents may stop functioning as a control group when their knowledge, attitudes or behaviors change as a result of five factors. These are: 1) demand characteristic – awareness of participation in the study, 2) experimenter bias -- being treated differently by the researcher, 3) compensation rivalry -- being compensated differently for participating in the study, 4) demoralization -- losing interest in the study, and 5) contamination -- learning about the experimental treatment in some way (Campbell & Stanley, 1963; Cook & Campbell, 1979). Researchers are mindful of guarding against these artifacts but field conditions may still present challenges that cannot be controlled through later statistical manipulations. For example, protocol guidelines of institutional review boards (IRB) serving to protect human subjects from risk may stipulate the dissemination of a specific level of information to satisfy the criterion of informed consent which may also provide information about the experimental treatment. Respondents may be offered participation incentives which bias their responses. Randomization of respondents into treatment and control groups may result in non-equivalent groups by chance. Events or developments in the environment may influence perceptions and the ways respondents assess messages. Incredibly, the present study was affected by all four conditions.

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[1] A MEDLINE search by the authors yielded 188 studies with the search term, "MRFIT" dating from 1975 through 2001 accessed via the website, http://www.nlm.nih.gov (retrieved March 15, 2001).

Method

Using a post-test control design, the present study was intended to assess the appeal, comprehensibility and persuasibility of four child and maternal health messages among economically disadvantaged women in India. The messages were short dramatized vignettes featuring a mother and her pregnant daughter. Four healthy behaviors were promoted as modeling behaviors for rural Indian women of childbearing age in Punjab. The messages included a prenatal visit to the doctor, meeting with a trained birth attendant, learning about oral rehydration during a clinic visit and breast-feeding of her infant. The messages ranged from 30 seconds to 2 minutes and were produced as a training and production project between the Punjab Ministry of Health, the Teachers' Technical Institute, and two nonprofit U.S. organizations which provided funding and technical assistance[2]. The messages were shot in Punjab, India by an Indian production team and post-produced in London with the same team in 1998. They have been broadcast via national television in Punjab as well as screened via in-clinic television among local district health clinics.

Assessing the impact of the messages was the next step in determining message effectiveness. The opportunity to collect data in India occurred in summer 2000 when a trained researcher was going to Tamil Nadu in South India to conduct fieldwork among economically disadvantaged women. The messages were translated into Tamil for the testing. Respondents for a control group and an experimental group were recruited through a snowball sample. Two women who lived in a Chennai slum introduced their friends and relatives who in turn recommended others to join the groups. The control group comprised 19 women and met in a spacious storage room in the slum while the experimental group totaled 22 women and met in one of the slum-dweller's home. Women in both groups had the same demographic profile -- they were married, of childbearing age (18–35), had a grade 7 or lower education and a household income of below Rs. 4500 per month (U.S. $100). The women were randomly assigned to one of the two groups except for 4 women who could only attend a particular session because of schedule conflict. Each woman was given a container with lentils as an incentive for participating in the message testing. The response rate was 100%.

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[2] The two nonprofit organizations were the Center for Communications, Health and the Environment and the American Institute for Cancer Research, both of which are based in Washington, D.C.

The control group met on July 26th 2000 and the experimental group met the day after. A trained field researcher conducted both sessions in Tamil. First, she briefly summarized the procedures of the session (the control group would be informed about the topics of interest, after which they would be asked a series of questions) and handed out questionnaires. Next, she provided information about the topics (visiting the doctor, oral rehydration, breast feeding and using a trained birth attendant) and then talked through the questionnaire items with the women. She solicited responses to questions about their past behavior and its frequency on a visual scale ranging from a "tiny box" to a "big box" (where "tiny box"=not at all and "big box"=very often). This scale was used in relation to three behaviors: 1) visiting the doctor when they were pregnant, 2) feeding their child a solution of salt and sugar when s/he was dehydrated or had diahhrea and 3) breast feeding their infant. The fourth behavior -- having a trained birth attendant -- had different scale referents: "tiny box"=not at all, "small box"=heard information about the trained birth attendant, "medium box"=talked to the attendant, "slightly big box"=heard information and talked to the attendant, and "big box"=heard information, talked to and had the attendant at her delivery. A visual scale (see Figure 1) was used to overcome any literacy problems. The women were subsequently asked what they would do in the future regarding the same events using the same visual scales. Basic demographic information about age and the number of the children was obtained at the end of the session which lasted approximately an hour and fifteen minutes.

The field researcher used similar procedures to conduct the experimental group. The only difference was that the group viewed the television messages one at a time after they responded to questions about their past behavior regarding the specific topics. After each message, the women were asked questions about its appeal (how much they liked it), comprehensibility (how much they understood it) and persuasibility (how they would behave in the future). Subsequently, the women participated in a discussion about their views on the individual messages. They were asked to vote for their favorite message, explain why and then similarly indicate their least favorite message. Finally, basic demographic data regarding age and number of children were collected. The experimental session lasted one hour and 50 minutes.

Both groups of women enthusiastically participated in their respective sessions and discussions. According to IRB guidelines, all respondents were fully informed of the topics discussed, particularly oral rehydration and having a trained birth attendant. The rationale was that respondents had to be informed about the things in which they were participating. They were also made aware that choosing not to answer a particular question or stopping mid-way during the session would not prevent them for getting the incentive for participating in the study. None withdrew.

The groups were compared for age and number of children. On the one hand, both groups had a similar number of children (2.42 vs. 2.18). On the other hand, the average age for women in the control and treatment groups differed significantly (22.21 vs. 24.5, $t = -2.06$, $p < .05$). Bearing this in mind, age was held as a covariate in further analyses to control for its influence.

Multiple analysis of variance with repeated measures statistics were run to assess differences between the two groups for the four topic areas at two time points: past behavior or pre message exposure and future behavior or post message exposure. Message appeal and comprehensibility were assessed among the experimental group using repeated measures analysis. Favorite choice and least favorite choice were identified with descriptive statistics. Probability levels were set at $p<.05$.

Results

Table 1A summarizes the means and standard deviations for past vs future behavior between the treatment and control groups. The mean scores for both groups toward two messages – prenatal doctor visits and breast-feeding – were relatively high for both past (3.86 to 4.79) and future behaviors (4.04 and 5.00) on a scale of 1 to 5. In comparison, the scores of both treatment and control groups regarding the use of a birth attendant remained low for both past (1.64 and 1.42) and future behaviors (1.95 and 2.26). The message on oral rehydration received moderate scores from both groups for past (2.86 and 3.53) behavior and higher scores for future behavior (4.00 and 3.79).

Tables 1A and 1B About Here

Multivariate analyses of variance showed that there were no significant differences between the groups towards three of the four messages but an interaction effect was observed between group and the birth attendant message $F\,(1, 38) = 4.524, p < .05$. Table 1B reports the multivariate analysis of variance results for this message. In comparison to the treatment group, the control group reported lower mean scores for past behavior (M=1.42) and higher scores for future behavior (M=2.26).

The treatment group liked the message on oral rehydration best as they rated it highest in appeal (M=4.9, sd=0.31), followed by breastfeeding (M=3.85, sd=1.23), prenatal doctor visit (M=3.65, sd=1.27) and birth attendant (M=3.10, sd=1.17). However, the scores were not significantly different, suggesting that the messages were equally liked. All the messages were consistently well understood (*M*=4.62 to 5.00, *sd*=0 to 0.67). Oral rehydration seemed to be the favorite message among 2 out of 5 women. This was followed by prenatal visit (choice of 1 in 3). Both messages on prenatal visit and birth attendant were selected by 1 in 3 women as their least favorite.

Discussion

The purpose of the present study was to assess the appeal, comprehensibility and persuasibility of four child and maternal health video messages among economically disadvantaged women in India. The messages promoted prenatal doctor visits, using a trained birth attendant, oral rehydration and breast-feeding through short dramatic vignettes. Using a post-test control design, the study tested the messages by showing them to a group of women and asking the latter about their past and present behavior regarding these behaviors. A control group did not see any video messages and was asked to respond to the same questions.

Overall, no definitive significant differences were found. The messages did not vary significantly in appeal or comprehensibility and all seemed to be well liked and well understood by the treatment group. The treatment and control groups did not respond significantly differently to three messages regarding their past and future behaviors. Both groups already practiced two behaviors frequently -- prenatal visits to the doctor and breast feeding – and were equally highly likely to continue these practices in the future. The women in the urban city of Chennai apparently had good access to the local urban clinics and/or hospitals where they had gone to seek pre- and post-natal advice, child and maternal care and treatment. Consequently, they were already well informed and experienced in prenatal and infant health care. The women for whom the messages were intended comprised rural village women in the state of Punjab and the purpose of the messages was to encourage them to visit their nearest district clinics and also to promote breast-feeding when they had infants. Possibly, the rural/urban context of the original target audience and the test subjects accounted for these findings.

The past practice of oral rehydration seemed as frequent among the women in the treatment group as that of the control group and the future practice was equally as high. Again, this behavior may already have been promoted through access to the local urban clinics or hospitals.

The only message that elicited any significant difference was the message of using a trained birth attendant. This notion seemed unfamiliar to both groups as they were equally unlikely to practice this in the past. However, through the process of the testing session, the control group indicated a significantly higher likelihood of using a trained birth attendant ($p<.05$). It is possible that in the urban area of Chennai, trained birth attendants are not a common health service feature compared to the rural villages in Punjab for whom the messages were originally produced. As such, the change in behavior among women in the control group may have been a function of the testing procedure and information gained during the session. One of the IRB requirements protecting human subjects from risk stipulated that all respondents be informed about the procedures in which they will participate so that "informed consent" can be obtained. It is possible that the very information provided to the control group members in the briefing session could have led to the interest in having a trained birth attendant. This is an instance of the researcher introducing a confounding variable.

Randomization of subjects appeared to allow an age difference between the treatment and control groups. It is possible that the difference arose from permitting a variance from the rule –

allowing four women (9.8% of the overall sample) to select their day of attendance. Fortunately, treating age as a covariate effectively controlled the effect of age on the relationships analyzed.

Limitations and Future Research

Obtaining a 100% response rate among the 41 total respondents could be partly attributed to the participation incentive comprising a container of lentils. In view of their low income and status, it is possible that offering a gift of this nature could have biased them to participate and by the same token, biased some of their responses. An incentive more appropriate to the task, and suggested by health professionals working in this environment should be considered.

Problems of internal validity underlie the study's outcome and solutions for future implementation are proposed. Firstly, researchers should be aware that IRB stipulations about "informed consent" must be balanced with a proper level of information to avoid contaminating the sample. Secondly, experimental subject randomization procedures should not be subverted by on-location field exigencies such as respondents' schedules. There is a reason for the method. Thirdly, messages intended for a specific audience should be tested on that audience. The opportunity to collect data in an "Indian town" is not equivalent to data collection in a "relevant Indian town." Researchers should always be mindful of the fruitless "drunkard's search" (Kaplan, 1963) and not be misled by the lure of the lighted lamp post and the clear light that it casts far from the true focus of the search. A preoccupation with methodology and the science of research is as important as focusing on the theoretical constructs guiding research.

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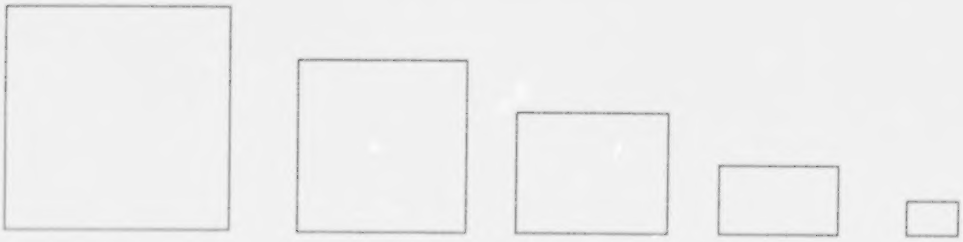
Figure 1. Visual scale of different sized boxes



Big box=very often, tiny box=not at all for frequency of: 1) visiting the doctor when pregnant, 2) feeding infant a solution of salt and sugar when s/he was dehydrated or had diahhrea, and 3) breast feeding infant.

Big box=heard information, talked to and had the birth attendant at her delivery,
slightly big box=heard information and talked to the attendant,
medium box=talked to the attendant,
small box=heard information about the trained birth attendant,
tiny box=did not hear information, talk to or have a birth attendant at all.

Table 1A. Summary of Means[a] and Standard Deviations for Past vs Future Behavior Between Groups towards Four Child and Maternal Messages

Messages	Treatment (n=22)		Control (n=19)	
	Means	SD	Means	SD
Prenatal visits to the doctor:				
Past	3.86	1.25	3.89	1.49
Future	4.04	1.25	4.37	1.26
Use a trained birth attendant:*				
Past	1.64	1.26	1.42	2.26
Future	1.95	1.05	2.26	1.05
Oral rehydration				
Past	2.86	1.32	3.53	1.39
Future	4.00	1.23	3.79	1.22
Breast feeding				
Past	4.77	0.43	4.79	0.92
Future	4.86	0.35	5.00	0.00

[a] Means are based on scales of 1 to 5 where 1=not at all and 5=very much.

* Multivariate analysis of variance results indicated an interaction effect between group and message, $p < .05$.

Table 1B. Multivariate Analysis of Variance with Repeated Measures for Birth Attendant Message Scores Regarding Past vs Future Behaviors

Source of Variation	SS	df	MS	F
Between-subjects effects:				
Group	0.836	1	0.836	0.386
Covariate (Age)	5.49	1	5.49	2.538
Error	82.22	38	82.22	
Within-subjects effects:				
Birth attendant	0.625	1	0.625	2.795
Birth attendant x Group	1.011	1	1.011	4.524*
Birth attendant x Age	0.158	1	0.158	0.709
Error	8.491	38	0.223	

$^{*}p < .05$

How does political commentary shape perceptions of political candidates? A quasi-experimental investigation of the 2000 Vice-Presidential Debate

Fang Wan
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How does political commentary shape perceptions of political candidates? A quasi-experimental investigation of the 2000 Vice-Presidential Debate

ABSTRACT

Subjects viewed the 2000 vice-presidential debate in one of four conditions - the debate followed by post-debate coverage on one of the three major networks, or the debate alone. The content of the post-debate coverage also was analyzed. Subjects who didn't see post-debate coverage perceived greater knowledge gains, and they rated Lieberman less favorably in his debate performance and overall. Priming hypotheses based on patterns of emphasis in the networks' commentaries had little support.

How does political commentary shape perceptions of political candidates? A quasi-experimental investigation of the 2000 Vice-Presidential Debate

Research on televised presidential debates has been conducted regularly since these events were revived as a quadrennial ritual in 1976. For the most part, this research has shown that political debates prompt political learning and influence both public opinion and evaluations of political candidates (Holbrook, 1999; Schrott, 1990). Chaffee and Dennis (1979), Miller and MacKuen (1979), Sears and Chaffee (1979) and others have shown convincing evidence that people learn about political candidates from debates and that political debates play a significant role in informing the electorate. Schrott (1990) and Kraus and Davis (1976) also found evidence that debates shape viewers' perceptions of the political candidates and even influence their voting decisions.

The role of media coverage of these events also has received some attention. These studies, as well as contemporaneous journalistic analyses, suggest that news coverage itself can be persuasive in judgments of who won a debate, and perhaps in vote choice as well. These studies have typically compared immediate assessments of who won with assessments made a couple days later, after respondents had presumably been exposed to news of the debate. In some cases, public opinion did a neat pirouette in the interim.

In the first 1976 presidential debate, Lang and Lang (1979) found that people asked immediately after the debate were likely to proclaim Jimmy Carter the winner, but those who responded a few days later (and who would have been exposed to the news media reports) tended to believe Gerald Ford had won. In the second debate that year -- in which Ford stated that Eastern Europe was not under Soviet domination -- the reverse pattern was found. Those interviewed within 12 hours after the end of the debate thought Ford had won, but those

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interviewed thereafter gave the win to Carter (Patterson, 1980). Kraus (1988) pointed out that the media's verdict on the second debate was clearly for Carter.

In 1984's first debate, Walter Mondale was the media's consensus winner, seen as outperforming an uncharacteristically halting Ronald Reagan. One New York Times/CBS News poll done immediately following the debate showed viewer judgments favoring Mondale by 43 percent to 34. Days later, another Times/CBS poll put the margin at 66-17 (Church, 1984). Soon thereafter, Mondale gained five to six points in the polls, cutting Reagan's lead in half (reported in Hellweg, Pfau and Brydon, 1992).

As impressive as some of these studies are, they lack the control and clarity of causal inference that experimental design and random assignment afford. It is interesting to note that, in their 1978 study, Lang and Lang tried to conduct an experiment to shed light on this issue—they wanted to isolate the influence of debate commentaries on viewers' perceptions of political candidates, but audio difficulties during the Carter-Ford debate made this pursuit infeasible (1978, 324). To date, two published works we're aware of have explored whether post-debate commentary can influence viewers' perceptions of who won the debate as well as their evaluations of the political candidates. Lowry, Bridges and Barefield (1990) examined the perceptions and attitudes of viewers following the 1988 Dukakis-Bush debate. They found that the control group, which was exposed to the debate only, indicated that Bush had won the debate. However, the group exposed to ABC's post-debate special indicated that Dukakis had won the debate, mirroring ABC's commentary and snap poll. Additionally, McKinnon, Tedesco and Kaid (1993) found that the commentary following a 1992 presidential debate between Clinton, Perot and Bush slightly lowered Clinton's ratings.

Though these studies have provided insights into our understanding of effects of post-debate commentary, it remained unclear how post-debate commentary exerted its influence on people's perception of political candidate—via learning, priming or persuasion. Also, these studies have not examined differences between news organizations in their coverage of debates. Their general assumption that news coverage is news coverage may be warranted by previous work on pack journalism. However, Robinson and Sheehan (1983) compared CBS News and UPI over the course of the 1980 presidential campaign and found several substantive differences. It is the contention of the present research that these differences can make a difference.

This paper describes an experiment that should help to illuminate the influence of post-debate media coverage on viewers' perceptions of political candidates. In our study, a group of approximately 130 participants viewed the 2000 Vice Presidential debate between Dick Cheney and Joe Lieberman. These participants were randomly assigned to one of four conditions. One group – the control group – only watched the debate. The other three groups viewed both the debate and subsequent debate commentaries on one of the major television networks (ABC, CBS, and NBC).

This experimental design gives us the opportunity to evaluate several hypotheses, derived from an eclectic mix of literature concerning media persuasion, priming, cognitive complexity, and debate learning. We expected to find that debate commentaries would play an important role in molding viewers' evaluations of the candidates and the debate as a whole. Also, depending on what aspect of the candidates and the debate commentators emphasize, we expected that the commentary would prime viewers to focus more or less on issues or personal traits when evaluating the candidates. Furthermore, we believed that those who viewed informative commentaries would report having learned more and would exhibit more cognitive complexity when evaluating the candidates.

The first section of this paper will explain each of these hypotheses in more depth and give a brief overview of each of the bodies of literature to which this project relates. The second section will elaborate on the different methodologies used in this project. It will briefly explain the coding schemes for analyzing the debate commentaries, as well as the kinds of closed-ended questions featured in the surveys. The third section will present the results of our projects' analyses, and the final section will highlight our general findings and discuss their broader relevance and importance.

Learning from Political Debates and Post-debate Commentary

As mentioned above, several studies have found that political debates increase viewers' knowledge about candidates and issues. Scholars find that viewers report having learned from debates and that they show a greater understanding of candidates and their issue positions after watching debates (Chaffee and Dennis, 1979; Becker, Sobowale, Cobbey, and Eyal, 1978). The debates serve mostly to crystallize existing opinions (Miller and MacKuen, 1979; Sigelman and Sigelman, 1984) although they also can be important for undecided voters (Chaffee and Choe, 1980, Brydon, 1985). Benoit, Webber and Berman (1998) found that individuals who watched the 1996 Clinton-Dole debate were better able to recognize the issue positions of the two candidates than those who did not watch the debate. Hullett and Louden (1998) found that individuals are able to recall information regarding their preferred candidate more than a candidate they do not prefer.

Holbrook (1999) found that the context of the debate matters for how much viewers absorb information. He found that debates held early in the campaign and between lesser-known candidates are most likely to lead to learning. Holbrook's findings are especially interesting in relation to our study of the vice-presidential debate, which occurred in early October and between two candidates who were *not* widely recognized among students in our sample or the public in general. Because this debate did not take place closer to the election and involved relatively low-profile candidates, debate learning should be an important, observable outcome in our experiment. This leads to our first hypothesis:

Hypothesis 1: Compared to pretest measures, viewers should know more, and perceive they know more, about the vice presidential candidates after having watched the debate.

While it is clear that viewing the Lieberman-Cheney debate should cause viewers to learn about these candidates, it is much *less* clear whether the post-debate coverage will have the same effect on learning. Because previous studies have not tested this issue, it is difficult to make a clear-cut prediction. On one hand, well-executed coverage should help to "wrap up" and summarize the main points from the debate, making it easier for viewers to digest and process this influx of information. In this way, commentaries can help viewers to feel less overwhelmed by the amount of detail and information they have encountered over the course of two hours. Also, an informative commentary can offer viewers additional information above and beyond that presented in the actual debate. On the other hand, debate commentaries could have the effect of taking the debate and simplifying it, drawing attention away from its complicated details and nuances. This may discourage and distract viewers from contemplating the information they have witnessed in its entirety. Moreover, because the commentators offer their own evaluations, viewers may rely on these instead of thinking through the debate on their own and generating their own evaluations and opinions.

Because of these competing forces, it remains unclear what kind of impact the debate commentaries will have on how much the viewers learn and perceive that they learn. Of course, we do think that the quality of the commentary is an important variable to consider – especially the degree to which the commentary presents complex arguments, divergent viewpoints, and well-supported claims. While we cannot be sure whether watching the commentary makes the viewers feel they have learned more, we do think that more informative commentaries should cause the viewers to learn more (and perceive that they have learned more) than uninformative commentaries. Therefore, our first research question is:

RQ1: Will watching the debate and commentary (versus the debate and no commentary) cause viewers to learn more about the candidates?

Related to this discussion of learning is cognitive complexity. In psychological analyses, cognitive complexity refers to a long-term individual cognitive trait. According to Philip Tetlock, the concept helps to differentiate people who "rely on a few broad principles or generalizations in interpreting events" and those who "interpret events in more flexible, multidimensional ways and attempt to develop perspectives that integrate a wide range of information and values specific to a problem at hand" (1984, 365).

We wish to broaden this concept to also describe cognitive characteristics that fluctuate and are susceptible to short-term influences. More specifically, we want to uncover the impact of political debates and commentaries on viewers' level of complexity in terms of evaluating the candidates. Do viewers who view only the debate evaluate candidates in a more (or less) cognitively sophisticated way than those who view both the debate and the commentary?

Similar to our uncertainty about the impact of commentaries and learning, it is unclear what impact commentaries will have on evaluative complexity. In some ways, viewing the commentary may help people understand and process the relatively large amount of information from the debate more easily. In other ways, viewing the commentary – especially one that is simplistic and undifferentiated – could have the impact of compressing the dimensions people use to evaluate the candidates. That is, it could cause them to focus more narrowly on only a handful of issues than they would have had they not viewed the commentary. This leads to our second research question:

RQ2: Does watching the debate and commentary (versus the debate and no commentary) cause viewers to exhibit higher or lower levels of evaluative complexity?

Post-debate Commentary as a Tool of Persuasion

Gladys Engel Lang and Kurt Lang (1978) conducted an experiment a bit like ours, comparing delayed versus immediate reactions to debates. Their control group watched the Carter-Ford debate and reported their reactions directly afterward, and their experimental group watched the debate in an uncontrolled setting and reported their reactions approximately one week later. Lang and Lang found that those in the controlled condition had perceptions of candidates consistent with their party affiliations and were generally favorable toward the debate as a whole. Viewers' reactions in the delayed condition, regardless of their party affiliation, reflected those portrayed in the media.

While Lang and Lang (1978) allowed their experimental group to be exposed to a week's worth of external influences, we believe that merely observing the post-debate commentary will shape public perceptions in a similar manner. That is, we expect to find that debate commentaries should play a role in molding viewers' evaluations of the candidates and the debate as a whole.

While Lang and Lang (1978) presented a convincing analysis, they were disadvantaged—they did not know exactly to what the people in their experimental group were exposed. These people experienced a week's worth of interactions that they themselves probably would not be able to remember, much less accurately report. In contrast, the stimulus in our experiment is much more isolated and controlled. Although we were unable to plan or control the content of these commentaries that our subjects viewed in "real time," we have been able to analyze these commentaries and document their contents. With this ability to evaluate the contents and overall tone of each commentary, we seek to shed light on the following hypothesis:

Hypothesis 2: Viewers will evaluate the candidates more positively or negatively depending on the valence of the tone of the commentary.

Priming in Light of Post-debate Commentary

For the past decade, media researchers have used the idea of priming to examine the impact of the news media on the public's evaluation of political leadership (Iyengar et al., 1984; Iyengar and Kinder, 1987; Krosnick and Kinder, 1990; Iyengar and Simon, 1993; Krosnick and Brannon, 1993; Pan and Kosicki, 1997). In the process of priming, the media set the criteria by which the public judges political leaders. That is, the media highlight some issues or attributes over others, and it is these attributes that the public contemplates when evaluating political elites.

For example, Iyengar and Kinder (1987) found that, when people evaluate the president of the United States, they tend to place more emphasis on the president's handling of issues that have been highlighted in news coverage. As the media emphasize particular ideas, these ideas become salient to individuals and make their way to the forefront of individuals' cognitions (McCombs & Shaw, 1993). These ideas, therefore, become more likely to enter the calculus for evaluations of political leaders (Iyengar and Kinder, 1987; Krosnick and Kinder, 1990).

In our study, we expected to find evidence of priming effects. We expected our viewers to evaluate the vice-presidential candidates using the same criteria used in the debate commentaries they observed. Luckily, our study included three different commentary conditions, and these commentaries differed in the extent to which they emphasized traits, issues, and debate performance when evaluating the political candidates. This leads to our next hypothesis:

Hypothesis 3: Across the different conditions, viewers will place different levels of emphasis on traits, issues, and debate performance when evaluating the candidates. The viewers should emphasize criteria for evaluation similar to those utilized by people featured in the debate commentary they viewed.

Method

Procedure:

To test our hypotheses we designed an experiment around the vice presidential debate on Oct. 5, 2000, between Republican candidate Dick Cheney and Democratic candidate Joe Lieberman. Participants watched either the debate or the debate plus post-debate commentary on one of the three major television networks. We conducted our experiment in real time. The primary advantage of conducting the experiment in this manner is that it ensured that this was the first exposure that any of the participants had to the debate. This allows us to rule out any impact of prior participant knowledge of the debate results on their evaluation of the candidates and the debate itself. On the other hand, this design made it impossible for us to know the content of the various stimuli prior to the experiment ahead of time, which limited the specificity of the questionnaire. We decided that the benefits of an uncontaminated sample outweighed the limitations on the questionnaires.

One hundred thirty participants were recruited from introductory communication classes at a major Midwestern university. They were compensated for their time with pizza and, depending on which class from which they were recruited, extra credit. The sample was young, liberal (mean self-placement was 4.4 on a scale where 1 is liberal, 11 conservative), more female (60%) than male, with a plurality identifying as Democrats (36%). In analyzing the results, we have made sure to control for partisanship, ideology and gender statistically to rule out spurious causes of our results and to compare the impact of the debates and the commentary with the impact of these individual differences.

Participants were randomly assigned to one of four rooms. There were no statistically significant differences among the samples in the various conditions on the various demographic and ideological items. Each room contained one condition. In the control condition, participants watched only the debate. The researchers administering this condition turned the television off immediately after the debate and before the beginning of the commentary, and they even muted journalists' comments prior to the onset of the debate. In the other conditions, participants watched the 90-minute debate and the 30-minute post-debate commentary on ABC, NBC or CBS.

Before the debate, participants completed a questionnaire that included demographic items, questions about partisanship and ideology, measures of background information on the candidates, evaluations of the candidates, vote intention, and expectations for each candidate's performance in the debate. After the debate (or the debate commentary in the three experimental conditions), participants completed a longer questionnaire that contained most of the non-demographic items from the first questionnaire, as well as evaluations of debate performance, evaluations of candidate traits, preference for candidates on various issues, and perceptions of the overall winner of the debate. Most items utilized 11-point Likert-type scales to measure the responses, although some, such as "Who do you think won the debate?" and the issue questions, were multiple choice. (We also included open-ended questions, asking the subjects to evaluate both the candidates and the debate, but we do not analyze the responses to these open-ended questions in this paper.) Most items also included a "don't know" or "it was a tie" response. Not surprisingly, among college students, "don't know" was a common answer in the pre-test when asked to evaluate the candidates. This also is a reflection of the relative obscurity of the two vice-presidential candidates at that point in the campaign. The open-ended questions in the post-test were asked first to avoid any priming from the other questions in the questionnaire. On both the pre- and post-test, we varied the order of candidate choices to avoid any order effects that could bias the results.

Content analysis of post debate commentary

A content analysis of each commentary condition (NBC, CBS and ABC) was performed in order to give us a starting point for our analysis. The commentary text was obtained from Burrelle's Transcripts and then split by the coding team into distinct statement units containing a single idea. The effect was that some sentences in the transcripts were split into more than one statement, while a few statement units were made up of entire paragraphs. The content was eventually divided into 143 statement units for NBC, 115 statement units for CBS, and 115 statement units for ABC. On average, NBC's statements were 2.29 lines long in the transcript, while ABC's were 2.67 and CBS's were 2.62 lines long. A line of text equals about four seconds of on-air speech.

Two coders separately coded each of the three commentaries without prior knowledge of the results from the post-tests. After individually determining codes for all of the statement units, the team came together to resolve differences and agree upon a code for the statements. The final debate commentary coding is a reflection of this compromise. Intercoder reliability was .865 (refer to Appendix I for detailed coding schemes). For the present research, each network's statements about Cheney and Lieberman was broken down into the following categories: character traits, competence traits, issues, presentation style, and debate victory or success. Also, each statement was coded as positive, negative or neutral so that net positive statements from each network for each candidate can be calculated. The results of content analysis are included in Appendix II.

Content analysis of post debate commentary is particularly important to examining the priming and persuasion effects hypothesized in the study. Content analysis can generate clear patterns of how favorably different news media comment on a candidate and how much they emphasize certain aspects of a candidate. Such patterns will guide our specific hypotheses of how subjects will evaluate a candidate (persuasion) depending on the tone of media coverage and how much they focus on certain aspect of a candidate when evaluating him (priming). For the sake of clarity, we will discuss content analysis results and subjects' perceptions and evaluations of candidates together in the results section.

Measures:

Perceived knowledge of the candidate. The respondents were asked both before and after viewing the debate and debate commentary, "How much do you know about Joseph Lieberman/Dick Cheney, the Democratic/Republican candidate for vice president?" The respondents reported their knowledge of the candidate on an 11-point scale, with 1=not very much and 11=quite a bit. The mean scores of the pre and post measure were compared in the subsequent analysis.

Overall favorability of the candidate. Both before and after the viewing experience, the respondents were asked to report their overall favorability toward Lieberman and Cheney by using an 11-point scale, with 1=very unfavorable and 11=very favorable. The mean scores of the pre and post measure were compared in the subsequent analysis.

Voting Likelihood. The respondents were asked to indicate their likelihood of voting for the candidate if he were running for president by using an 11-point scale with 1=very unlikely and 11=very likely. The question was asked both before and after the exposure to the debate and the commentary.

Debate performance of the candidate. We measured debate performance of the candidate twice. Upon their arrival at the experiment site, the respondents were asked to predict how each candidate would perform in the debate by using an 11-point scale with 1=very poorly and 11=very well. After viewing the broadcast of debate and debate commentary, the respondents were asked to evaluate "How well did Lieberman/Cheney perform in tonight's debate" with the same 11-point scale. Again, the mean scores of the pre and post measure were compared in the subsequent analysis.

Debate evaluation. Debate evaluation is composed of five items: "Did the debate help you decide whom to vote for?" "Are you more or less certain of your candidate preference after watching the debate?" "Are more or less likely to vote after watching the debate? "How much do you feel you learned about the candidates from the debate?" "How do you feel overall about the debate you just watched?" After viewing either the debate or debate plus commentary, the respondents were asked to answer the above questions by using an 11-point scale with 1 indicating the most negative answer and 11 indicating the most positive answer. Factor analysis of the five items with principal component extraction method extracted one factor, explaining 47% of the variance. We created an index of debate evaluation by summing up the five items (alpha=.71). For the new variable, the high end of the scale is 55 and the low end is 5.

Trait evaluation. After viewing the debate and the commentary, the respondents in all viewing situations were asked to evaluate both candidates along ten traits—"intelligence," "leadership abilities," "morality," "compassion toward people," "knowledge of the issues," "vision for the future," "trustworthiness," "cares about people like me," "warmth," and "experience." We ran a factor analysis of the ten traits for both Lieberman and Cheney. Interestingly, two factors were extracted for Cheney (explaining 76% of the variance); only factor was extracted for Lieberman (explaining 77% of the variance). It is important not to place too much emphasis on this result, however, as the second Cheney factor barely passes Kaiser's criterion eigenvalue of 1, and Lieberman has a second factor that barely misses Kaiser's criterion. The eigenvalue for the second Cheney factor is approximately 1.1; the eigenvalue for a second Lieberman factor is roughly .9. When the analysis was rerun to force two Lieberman factors, the factors that were extracted were very similar for both candidates. The first factor is named competence, which is composed of six items--"intelligence," "leadership abilities," "morality," "knowledge of the issues," "vision for the future" and "experience." The second factor is labeled as character, which consists of four items--"compassion toward people," "trustworthiness," "cares about people like me" and "warmth." Then, we created an index of competence by adding up the six items for Cheney (alpha=.90) and index of character by adding up the four items (alpha=.90). In order to compare the two candidates along the same dimension, we broke the ten items for Lieberman into competence and character as well, following the factor structure of Cheney. Therefore, we added up six items to create competence index for Lieberman (alpha=.92) and summed four items to create character index (alpha=.93). Therefore, the new variable character ranges from 4 to 44 while the competence index from 6 to 66.

Evaluative complexity of the trait. To explore the extent to which the respondents differentiated the ten trait items when evaluating the candidate, we created a new variable, evaluative complexity, which is the variance of each individual's evaluation scores on the ten traits. The variable was created separately for Cheney and Lieberman. The mean score for evaluative complexity for Lieberman is 1.50 ; for Cheney it is 2.41.

Issue proximity. After viewing the debate and the commentary, the respondents were asked, "Which of the candidates do you prefer on the following issues, based on this evening's debate?" For each of the seven issues — health care, taxes, national economy, foreign policy, Social Security, education and moral standards — the respondents were asked which candidate was closer to their own point of view. Since each item is dichotomous, we created a new variable by counting the number of issues the respondents chose as closer to either candidate. The minimum score for the new variable is 0 and the maximum score is 7. The mean score for the variable for Lieberman was 3.1 and for Cheney was 1.8.

Party affiliation and ideology. The respondents reported their party identification and strength of party affiliation. We combined the two items and created a new variable, party affiliation, on a 7-point scale, with 1=strong Republican and 7=strong Democrat. Also, the respondents reported their ideology by using 11-point scale with 1=very conservative and 11=very liberal.

Campaign involvement. Before viewing the debate and commentary, the respondents were asked to indicate whether they had watched the presidential debate on Tuesday (Oct. 3, 2000) of that week. They also reported the number of days in the past week they saw or read a story about the presidential campaign on television or in a newspaper. The two variables were later used as campaign involvement variables in subsequent analysis. In our sample, 45.7% of the students viewed the presidential debate earlier that week, and the average number of days in which they read or watched campaign stories in a week was 3.6.

Results

Impact on learning and attitude change:

To test the impact of exposure to the debate and/or the post-debate analysis on perceived knowledge of candidates, we performed paired t-tests of pre and post measures for four viewing conditions separately. The results are shown in Table 1.

(Insert Table 1 about here)

According to Table 1, exposure to the debate and post-debate coverage caused a statistically significant increase in all four of our measures of viewer knowledge of the candidates. Here, Hypothesis 1 seems to be supported.

Specifically, the mean differences between posttest of perceived knowledge and pretest are statistically significant in all conditions. That means viewing the debate (and post-debate commentary) did make the respondents feel like they knew more about the candidates than they did before. The paired t-tests comparing pre-exposure and post-exposure measurement yielded significant results in all four viewing conditions (31 pairs out of 32 comparisons of pre and post measures are statistically significant). Moreover, viewing the debate (and post-debate analysis) made respondents feel more favorable toward candidates, and their evaluations of the candidates' debate performances exceeded their expectations of how candidates would perform. Also, respondents were more likely to vote for the candidates (if they were running for president) after viewing the debate than before the viewing experience.

Compared to the debate-only condition, subjects who saw post-debate coverage had significantly smaller gains in perceived knowledge about Cheney. For Lieberman, however, those viewing a post-debate analysis had about the same gain in perceived knowledge (smaller, but not significantly so) as did those viewing the debate only. This is puzzling, because the content analysis showed that all three networks devoted much more attention to Cheney than to Lieberman; summed across the networks, post-debate coverage included 80 statements about Cheney compared to 47 about Lieberman.

Table 1 also shows pre-post differences for several other dependent variables, which we will discuss in more depth later in the paper: favorability toward the candidates, evaluations of candidate debate performance (compared to expectations), and likelihood of voting for candidates if they were running for president.

In general, our results answered the first research question. That is, our respondents learned about the two candidates differently depending on which viewing condition they were in and which candidate they were evaluating. It seemed that the learning about Cheney was greatest in the debate-only condition, while for Lieberman, the increase in perceived knowledge was the same across all conditions.

Trait evaluation

To compare how the evaluation of the two dimensions of traits — character and competence -- was influenced by different viewing conditions and different candidates, we ran a 4×2 repeated-measures MANOVA analysis with one between-subject factor (four viewing conditions) and one within-subject factor (Lieberman vs. Cheney) and party affiliation serving as a covariate. The analyses were performed separately for competence and character. The results are shown in Table 2, Figure 1 and Figure2.

(Insert Table 2, Figure 1 and Figure 2 about here)

In Figure 1, the main effect of candidate is significant; evaluations of character were higher for Lieberman than for Cheney ($F_{1,120}=4.641$, $p<.05$). The main effect of condition is not significant ($F_{3,120}=1.52$, $p>.10$). But we found a marginally significant interaction effect between candidate and condition ($F_{3,120}=2.162$, $p<.10$), suggesting that condition made no difference to Cheney but did make a difference to Lieberman. We also found the expected significant interaction between party affiliation and candidate ($F_{1,120}=18.74$, $p<.01$), demonstrating that Democrats rated Lieberman higher and Republicans rated Cheney higher. This interaction was found in all subsequent MANOVAS, as well.

Paired t-tests on condition means in Table 2 demonstrate the differences. Evaluations of Cheney in terms of character were statistically the same across conditions. But the NBC and ABC commentary viewing groups reported a higher evaluation of Lieberman's character than did the debate-only group. Also, evaluations of Lieberman's character were significantly higher than those of Cheney in all conditions except the debate-only condition. It appears that perceptions of Lieberman's character were boosted in the commentary conditions, turning an evaluative dead heat (in the debate-only condition) into a runaway win.

Figure 2 shows a different pattern for competence. Here, we found the significant main effect of candidate ($F_{1,120}$=35.48, p<.01) was that Cheney was had the edge in all four conditions. This time, the main effect of condition was significant ($F_{3,120}$=2.76, p>.05), but the interaction between candidate and condition was not ($F_{3,120}$=1.64, p>.10); condition affected evaluations for both candidates.

However, as Table 2 shows, the evaluations of competence for Lieberman and Cheney were statistically different only in the debate-only condition. Figure 1 showed that the gap between the two candidates in terms of character shown in debate-only condition is exacerbated by the post-debate viewing conditions. Our paired-t tests also showed that the evaluation of Cheney in terms of competence did not differ between debate-only group and post-debate viewing groups. However, the evaluation of Lieberman in all three post-debate networks is statistically higher than in debate-only condition. So the commentary conditions again benefited Lieberman, narrowing Cheney's perceived edge in competence.

The content analysis found some differences between the broadcasts in the number of "net positive statements" (number of positive statements minus number of negative statements) they contained about each candidate's traits, but there was no across-the-board trend favoring Lieberman. See Append 1. For character, the biggest pro-Lieberman gap was on ABC, which had 2 net positive statements for Lieberman and 1 net negative for Cheney, a gap of 3. As Figure 3 shows, viewers in the ABC condition also had the biggest pro-Lieberman gap in evaluations of character. That makes some sense. But NBC's coverage had a pro-*Cheney* gap of the same size, and viewers in the NBC condition still gave Lieberman a significant character edge that the control group didn't.

For competence, again, we saw no clear reason that viewers of post-debate coverage would come to rate Lieberman almost as highly as Cheney. Only ABC had more competence-relevant net positive things to say about Lieberman (2) than about Cheney (1). The other networks had two more net positives for Cheney.

Issue proximity, debate performance, overall favorability and evaluative complexity.

To examine how different viewing conditions influence ratings of issue proximity, debate performance, and evaluative complexity for both candidates, we ran four 4×2 repeated-measures MANOVA analyses with one within-subject factor (Cheney vs. Lieberman), one between-subject factor (four experimental conditions) and party affiliation as a covariate. We also ran paired t-tests to compare the evaluations of two candidates, and evaluation of each candidate in four different conditions. The results are shown in Table 3 and Figures 4, 5, 6 and 7.

(Insert Table 3, Figure 4 about here)

Evaluative complexity

To answer our second research question — how different viewing conditions influence the evaluative complexity of the respondents — we ran a 4×2 repeated measures MANOVA analysis. The results are shown in Figure 4. The main effect of candidate is significant ($F_{1,123}=7.60$, $p<.01$). Respondents made a finer distinction among traits when evaluating Cheney than Lieberman. Paired t-tests in Table 3 showed that the difference in evaluative complexity between Lieberman and Cheney is statistically significant only in the NBC and ABC conditions. The main effect of condition is not significant ($F_{,123}=.58$, $p>.10$). Paired t-tests showed that the evaluative complexity for Cheney evaluations in the debate-only condition is not statistically different from the post-debate commentary conditions; however, respondents in NBC and ABC had a lower evaluative complexity when evaluating Lieberman than when evaluating Cheney. No interaction effect between candidate and condition was found. From Figure 5, we can clearly see that respondents in the NBC and ABC conditions showed a significantly lower level of evaluative complexity when evaluating Lieberman.

To paraphrase Tetlock, we might expect evaluative complexity regarding candidate traits to be the product of coverage that discussed the candidates in multidimensional ways and provided a wide range of information rather than relying on generalizations. Coverage addressing several traits and having greater variability in its assessments of those traits (rather than generalized one-sided evaluations) should result in more cognitive complexity, and vice-versa. But we might also expect commentary to simplify the actual event by boiling its richness of detail down to a few well-turned phrases.

It is striking that we would find relatively complex evaluations of Lieberman on CBS, the network that devoted the *least* coverage to traits – 10.4 percent of statements, versus 16.5 percent on ABC and 20.3 percent on NBC ($F_{2,369} = 2.311$, $p=.101$) – and which had only *one* trait statement about Lieberman (compared to four, all positive, on ABC and three, one positive and two negative, on NBC). It appears that this dearth of trait commentary about Lieberman left CBS viewers closest to the evaluative state of mind of viewers in the control group.

(Insert Figure 5 about here)

Issue proximity

In terms of the number of issues that the respondents shared with the candidate, there is a significant main effect of candidate in Figure 5 ($F_{1,123}=20.65$, $p<.01$). The paired t-tests in Table 3 showed that in all conditions, people agreed on more issues with Lieberman than Cheney (only the NBC and ABC conditions yielded a significant mean difference). We also found a main effect of condition ($F_{1,123}=2.79$, $p<.05$). Respondents viewing NBC agreed with Cheney on a significantly lower number of issues than in other conditions. Respondents viewing CBS had a larger number of issues they shared with Lieberman.

Append 2 shows the content analysis of net positive mentions concerning the candidates' issue stands. It is somewhat consistent with the experimental findings. CBS, the condition producing the greatest issue agreement with Lieberman, also had the most net positive statements, five, about Lieberman; issue agreement with Cheney was also highest on CBS, and CBS had the most net positive statements, four, about Cheney as well. ABC, one of the conditions in which there was significantly more issue agreement with Lieberman than with Cheney, had four net negative statements about Cheney, compared with one for Lieberman. But NBC, the other condition in which there was significantly more issue agreement with Lieberman than with Cheney, had two net negative statements about Lieberman and zero for Cheney.

(Insert Figure 6 about here)

Overall favorability

With regard to the overall favorability toward the candidates, we found a significant interaction effect of candidate and condition ($F_{3,123}=3.43$, $p<.05$). For the debate-only condition, respondents were more favorable toward Cheney than toward Lieberman (Lieberman=6.25, Cheney=6.86), though the mean difference is not significant. As indicated by Figure 6, the pattern was reversed in post-debate analysis conditions; i.e., respondents favored Lieberman more than Cheney. Respondents in the ABC condition yielded the largest difference in favorability ratings between the two candidates.

In the content analysis, summing across all statements about the candidates, ABC did indeed have the greatest pro-Lieberman gap: six net positive statements for Lieberman and none for Cheney. The totals for CBS, which had almost equal numbers of net positive statements for Cheney (12) and Lieberman (11), were also somewhat consistent with the experimental findings in that CBS was the condition in which there was the smallest difference in evaluations between the candidates. But NBC, whose viewers favored Lieberman, actually had many more net positive statements about Cheney (14) than about Lieberman (two).

(Insert Figure 7 about here)

Debate performance

For debate performance in Figure 7, we found there is a significant main effect of candidate ($F_{1,123}=44.41$, $p<.01$). The paired t-tests in Table 3 show that respondents in all conditions evaluated Cheney's debate performance more highly than Lieberman's, and the mean difference is significant in all conditions except NBC. The main effect of condition ($F_{3,123}=5.49$, $p<.01$) is also significant. The paired t-tests also showed that respondents in the post-debate commentary did rate the debate performance of both candidates higher than respondents watching the debate only. The interaction effect between condition and candidate is also marginally significant ($F_{3,123}=2.49$, $p<.10$); respondents in debate-only condition perceived a larger gap between the two candidates in terms of debate performance, with Cheney more highly rated. However, post-debate commentary pushed the evaluation of Lieberman up and made it closer to the evaluation of Cheney.

The narrowing of this gap is not surprising given the generally positive tones of the various networks' commentaries. See Append 3. In discussing the candidates' style, tone and presentation, the majority of all three networks' statements were ones that praised both candidates in the same breath, and the networks were positive toward each candidate in turn. In this area, no network gave an edge of more than one positive statement to either candidate.

The content analysis also coded for statements about which candidate won or had success in the debate. See Append 4. This table shows that ABC's coverage was overall slightly positive toward both candidates (the focus group members favored Lieberman, but ABC's snap poll gave a decisive win to Cheney). It was also close on CBS; CBS's coverage had four net positive statements for Lieberman to three for Cheney. NBC was the only network that had more statements (six) suggesting Cheney did well than statements suggesting Lieberman did (two). But puzzlingly, it was only in the NBC condition that there was no significant difference in the debate performance ratings for the two candidates.

Priming

A chi-square analysis of statements made in each of seven main categories showed significant differences between patterns of emphasis in the networks' coverage of the debate (x^2=36.365, df=10, p<.001). Analyses of variance were then run on the mean number of statements in each category, a measure that corrected for the higher statement total that NBC had. The means essentially represented the proportion of statements that a network devoted to each content category; when summed across the categories, the means for a network totaled 1. See the middle columns of Append 7.

The first ANOVA verified differences between the networks in the proportion of issue statements to total statements ($F_{2,370} = 7.767$, $p<.001$), and post-hoc tests using least significant differences showed that ABC (7.8 percent) had a significantly smaller proportion of issue coverage than did NBC (26.6 percent) or CBS (18.3 percent). Coverage of traits had differences approaching significance ($F_{2,369} = 2.311$, $p=.101$), with post-hoc tests showing that NBC (at 20.3 percent) had a greater proportion of statements on traits than did CBS (10.4 percent); ABC (16.5 percent) fell in the middle.

Another analysis weighted each statement by the number of lines it took up in the transcript. This analysis yielded somewhat different results. See the rightmost columns of Append 7. Differences in issue emphasis become only marginally significant ($F_{2,370} = 2.83$, $p<.06$), although ABC still lagged significantly behind its competitors in this area. What emerged were differences in emphasis on who won or did well in the debate ($F_{2,370} = 3.951$, $p=.02$), with ABC devoting approximately three times as much verbiage to this topic as CBS.

According to our priming Hypothesis 3, we should expect that, in forming overall evaluations of the candidates: a) the respondents in the ABC condition would place the least weight on issue proximity; b) NBC subjects would place more weight on traits than CBS viewers; and c) ABC viewers would place more weight on how well the candidate did than would CBS viewers.

To test the hypothesis, we regressed favorability of each candidate on issue proximity, character, competence, debate performance and debate evaluation separately for different viewing conditions. In each regression, due to the limited N in each condition, only one of the four criteria was entered; in essence, these are zero-order correlations. The results are shown in Table 4.

(Insert Table 4 about here).

Our hypothesis receives little support. Concerning 3a, we saw no sign that issue proximity had a lower correlation with overall candidate evaluations among the respondents in the ABC condition. Concerning 3b, respondents in the NBC condition did appear to place a heavier weight on competence when evaluating Cheney than did those watching the other two networks (beta=.40 for NBC; beta=.27 for ABC; beta=.32 for CBS; $p<.01$). However, this pattern of weighting traits more heavily did not hold in the other three tests: competence for Lieberman, character for Cheney, or character for Lieberman. As for 3c, viewers of ABC did have a higher correlation between their evaluation of Lieberman's performance and their overall evaluation of him (beta=.39) than did viewers of CBS (beta=.23), but the opposite was true in evaluations of Cheney; there, ABC viewers' evaluations of Cheney's debate performance were negatively correlated (beta=-.22) with their overall evaluations of him.

In Table 4, we also used the coefficients of the control group as the baseline to contrast with the coefficients of each network viewing condition. Paired t-tests comparing baseline coefficients (debate-only group) and viewing post-debate commentary conditions were conducted. In general, compared to debate-only group, respondents in post-debate commentary groups did not place significantly more weight on candidates' character, issue proximity or debate performance (candidates' style of debate) when evaluating the candidates. However, CBS and ABC viewing groups significantly placed less weight on competence when evaluating Cheney than control group ($t_{57}=2.40$ for CBS vs. Control; $t_{59}=2.31$ for ABC vs. Control). No such difference was found for Lieberman. Also, compared to the control group, respondents in commentary viewing groups placed significantly less weight on debate evaluation (who won the debate) when evaluating Cheney ($t>=2.13$ for three pairs of comparisons). Viewers of NBC and

ABC (but not CBS) commentaries had evaluations of Lieberman that were much more in line with their evaluations of his success in the debate than control group participants (t>=2.54 for both comparisons) when evaluating Lieberman. In short, post-debate commentary did shape respondents' evaluation criteria somewhat, more so for Cheney than for Lieberman.

An integrative model of candidate evaluation:

To understand the individual processes by which respondents evaluated the candidates, we ran parallel hierarchical regression models for Cheney and Lieberman. The results are shown in Table 5.

(Insert Table 5 about here).

First, the models are quite robust in terms of its predicting power (R^2 =58.6% for the Cheney model and R^2 =66.2% for the Lieberman model). It also provided some support for the persuasion hypothesis: People who viewed ABC, the network with the biggest pro-Lieberman gap in net positive statements, yielded a significantly lower evaluation of Cheney (beta=-.16, p<.05) and a higher evaluation of Lieberman (beta=.13, p<.05) than other respondents. Party identification and ideology definitely played a role in evaluation of the candidates. Liberals and Democrats tended to like Lieberman and dislike Cheney. Debate performance (beta=.18 for Cheney; beta=.23 for Lieberman; p<.01) and issue proximity (beta=.31 for Cheney; beta=.20 for Lieberman; p<.01) also mattered to the respondents when they evaluated the candidates. Interestingly, people paid more attention to competence when evaluating Cheney (beta=.41 for Cheney, p<.01; beta=-.15 for Lieberman; p>.10), while they focused more on character when evaluating Lieberman (beta=-.14 for Cheney, p>.10; beta=.54 for Lieberman; p<.01) This is consistent with our previous finding that people had very different evaluations of the two candidates in terms of the two trait dimensions.

Conclusion

Does post-debate analysis have an impact on candidate evaluation? The results are mixed. People have their own interpretive frames — party identification and ideology. Therefore, the pure effect of media coverage is filtered through individuals' own frames. That's probably the reason we did not find systematic priming patterns as we expected from the content of the coverage in different conditions.

Exposure to the debate for just 90 minutes (and commentary for 30 minutes) significantly raised respondents' perceived knowledge of the candidates and changed their perceptions of the candidates as well. This is not entirely surprising, since the debate may well have constituted the bulk of the information that most individuals had about the two candidates. Our participants started with uniformly low levels of knowledge about the candidates and had nowhere to go but up. The fact that the debate did have an effect is still encouraging, however. Interestingly, media interpretation seemed to hinder, rather than help, this learning process. It would be useful to attempt to replicate these findings with other samples of individuals, perhaps with objective measures of political knowledge as well as perceived ones. It may be the case that, while college students are relatively low in political knowledge, they have higher-than-average abilities in assimilating new information compared to a more representative sample of citizens. It may be the case that some people with lesser cognitive abilities might find the debate commentary useful.

Our model shows that evaluations of the candidates are not only dependent on traits and issues, as shown in previous literature. The evaluation of candidate is also dependent on contextual and situational factors, such as candidates' performance in the debate. Therefore, evaluating political candidate is a dynamic process. Many factors played a role here — predispositions of people (such as party ID and ideology), the predispositions and capabilities of the candidates (character, competence, issue positions), the context in which the evaluation is made (different exposure to different information about the candidates; different tasks the candidates face) and the interaction between candidates and the context (candidates' debate performance or candidates' solutions of certain tasks). Here again, it may be interesting to replicate this experiment using a larger sample. It seems likely that moderate citizens might react differently to the debates and the commentary than people with stronger partisan predispositions. A larger sample size would allow for the analysis of the interactions between personal predispositions and the context of the debate.

It was somewhat disappointing that there was not more variation in the effects of the various networks' commentary. This could have several different explanations. First, the commentary after a debate has a very different function than most political news. Normally, people are separated from political information and must rely on the news media to provide them with information and interpretations of political events. In debates and their commentary, however, the media is not playing the role of sole information provider. The participants watched 90 minutes of debate followed by 30 minutes of commentary (perhaps 20 after commercials). They had vast reserves of information to draw on in their evaluations, so the impact of the commentary could be moderated somewhat compared to a situation where viewers were relying on news for both information and interpretation.

Second, it is possible that the commentaries were, in Shively's (1998) words, variables that don't vary. While the content analysis did find differences in the content of the commentaries, it could be that these distinctions were too fine-grained for a viewer not trained in content analysis to pick up on. The motivation behind this relative homogeneity is the fairness norm. The networks attempted to provide fair coverage to the two candidates to avoid seeming biased. Thus, no network came out as particularly pro-Cheney or pro-Lieberman. They all had both good and bad things to say about both men. When individuals are presented with conflicting stimuli, they tend to fall back on their prior attitudes (Zaller 1992, Zaller 1994). Since supporters of a candidate could find negative information on their opponent and positive information on their candidate, they could focus their attention on this information and would not be inclined to have much change, if any, in their attitudes.

There are several ways to get around this in a future research design. First, it would be useful to use a commentary condition that differed dramatically from the others (Fox might have been an interesting source given the conservative bent of their news department). A second possibility is to again focus on only the moderates, since they do not have strong predispositions to fall back on as do more partisan citizens. It may be that there are effects among these moderates that are being overwhelmed in the analysis by the non-effects among the partisans. This would also be a politically interesting version of the project, as so much attention is placed on moderate swing voters. Finally, it is possible that tighter experimental controls could reveal impacts of the commentaries. While our experiment provided much of the control of other experiments, we had no control over the stimuli. The commentaries varied in a number of different ways, and it is impossible to disentangle the effects of these various differences. It may be possible to find evidence of persuasion, priming and other effects when the manipulations are more controlled.

In sum, we feel that we have shed some light on an under-explored area of political communications. It appears that in circumstances where people have had "direct" contact with a political event, the power of the media in shaping their opinions is generally diminished. This finding, preliminary as it is, may be interesting to explore in other political contexts, and it may have important implications for how to provide citizens with meaningful information about politics.

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Appendix I: Coding schemes for content analysis

Coding Scheme I

Coding scheme I was designed to describe the topic of the statement units. The main category units in this scheme are issue, trait, performance, and miscellaneous. Each statement unit was coded in one of these mutually exclusive categories.

Issues were identified as policy matters that could conceivably be highlighted in a presidential or vice-presidential debate. Most issue sub-variables, such as abortion or military, are self-explanatory. For example, statements such as, "when he talked about the tax cuts for all Americans" was coded as "taxes" in the "issues" category. The sub-variable "equality" was created to cover issues such as racial profiling, equal pay for women, and gay marriage. The category "vision" was created to encompass statements about a candidate's entire issue platform or general issue statements. An example of a vision statement was, "about Dick Cheney… [he has] strong positions."

The *Trait* code was used when the commentaries referred to the long-term characteristics of the candidates. The definitions of the various trait sub-variables arose from an agreement with the team coding the open-ended questions. Again, a number of the definitions are self explanatory, such as the sub-variables "compassion," "humor," "intelligence," and "leadership." "Cares about people," was used when the commentary referred to a candidate as a family man or a dad figure. "Charisma" was used when the candidates were viewed as vibrant or the opposite- dull. "Credentials" and "leadership" were split into two separate sub-variables. The first for mentions such as, "both of them showed how well experienced they are," and the second for statements such as, "and when Mr. Bush chose Mr. Cheney, it was fairly clear ... he had chosen a man to govern, if not always to campaign." Mentions of traits were later collapsed into two categories: competence traits and character traits.

The *Presentation* category was designed to identify statements that deal exclusively with the candidates' presentations at the debate. Sub-variables within this category include mentions of a candidate's physical actions in the debate, the extent to which candidates were relaxed, and discussion of how straightforward or clear a candidate's responses were in the debate. "Believable" is another example of a sub-variable in this category. It was used for statements such as, "Governor Bush's spokesperson prais[ed] Dick Cheney's performance tonight as authentic."

The *Miscellaneous* category was added in order to do a comprehensive coding of the commentary content. The first sub-variable in this category is for evaluations of the debate itself. The second sub-variable was for statements that evaluated the candidates' general performance or that declared a winner. Statements that fell into this area included, "the Gore campaign was happy with Lieberman's performance," or "I would say to a certain extent Dick Cheney was a winner." The third type of sub-variable in this category was for coverage of the breaking events in Yugoslavia. Two of the stations spent a substantial amount of time on this topic. Finally, the sub-variable for "other" included statements that did not relate directly to the candidates such as evaluations of the top of the ticket as well as general pleasantries exchanged by the commentators. This sub-variable encompasses all of the content that was deemed inconsequential to a respondent's reaction to watching the commentaries.

Coding Scheme II

Coding scheme II was designed to code for the details of each statement unit. Each unit was coded for all of these categories.

Length was coded in order to deal with the variance in the amount of text in each statement unit. For greatest inter-coder reliability, the length was coded by the number lines that it took up in the commentary transcript. Initially, the number of sentences was used, but reliability was just 59.9 percent, owing in part to the number of fragments and two-word utterances in the transcripts. Number of lines was then adopted, both to improve reliability and to improve the extent to which the measure accurately reflected statement length. Reliability for this measure was 89.6 percent.

About was used to identify the person who a particular statement was referencing. The choices in this category were: Lieberman; Cheney; both candidates; or neither candidate. Not all statements directly referenced who the subject was, so in some cases the coders utilized surrounding statements to infer the subject of statements.

Tone referred to whether a statement unit was positive, negative, or neutral. In some cases statements were positive about one candidate while being negative about the other. These statements were then split into even smaller statement units to reflect the varying tones.

Source was coded in order to determine the bias that might be involved in particular statements. This category is important because it is likely that a journalist's judgment of a candidate will be more credible to a viewer than one by a campaign spokesperson. This category will be important for further research.

Intercoder reliability

In a first crack at coding, the researchers independently coded the same 172 statements, placing each of them in one of four general categories: issue, trait, performance and other. With each category were 13, 13, seven and five subcategories, respectively. General agreement on placement of statements in the four categories was achieved in 76.7 percent of the cases. Specific agreement was reached 63.4 percent of the time. This wasn't bad, but it was less than could be hoped for, especially given the large number of "other" statements. Scott's pi, which adjusts for level of expected agreement, was a less-than-stellar .368 for the general agreement category.

After resolving systematic differences in coding style and adopting some consistent decision rules, the researchers tackled a separate set of 134 cases. Reliability was much improved. Agreement within six broad categories (issue, trait, performance, debate evaluation, judgments of who won and other) was 89.6 percent, and specific agreement within the same 38 subcategories was 71.1 percent. This time, reliability adjusted for expected agreement (using Cohen's kappa) was .865.

Appendix II: Content analysis of debate coverage of three major networks

Append 1: Net positive statements about character and competence, by network and candidate

	Character			Competence		
	Cheney	Lieberman	Both	Cheney	Lieberman	Both
CBS	+2	+1	+2	+2	--	+1
NBC	+1	-2	+1	+3	+1	+3
ABC	-1	+2	+3	+1	+2	+2

Notes:

1. Net positive statements equal positive statements minus negative statements; neutral statements are not included in the formula.
2. N=29 for character statements. N=24 for competence statements.
3. Statements coded "both" were ones in which speakers discussed both candidates.

Append 2: Net positive mentions about issues by network and candidate

	Cheney	Lieberman	Both	Neither
CBS	+4	+5	+1	0
NBC	0	-2	-2	-2
ABC	-4	-1	--	0

Notes:

1. Net positive statements equal positive statements minus negative statements; neutral statements are not included in the formula.
2. N=68 for issue statements. Statements coded "both" were ones in which speakers discussed both candidates. Statements coded neither addressed the issues themselves rather than the merits of candidate positions.

Append 3: Net positive mentions of debate performance (style and presentation), by network and candidate

	Cheney	Lieberman	Both
CBS	+1	+2	+11
NBC	+4	+3	+14
ABC	+2	+3	+5

Notes:

1. Net positive statements equal positive statements minus negative statements; neutral statements are not included in the formula.
2. N=55 for statements. Statements coded "both" were ones in which speakers discussed both candidates.

Append 4: Net positive statements about success in the debate, by network and candidate

	Cheney	Lieberman	Both
CBS	+3	+4	+4
NBC	+6	+2	+3
ABC	+1	+1	+3

Notes:

1. Net positive statements equal positive statements minus negative statements; neutral statements are not included in the formula.
2. N=52 for statements of success in the debate. Statements coded "both" were ones in which speakers discussed both candidates. Statements coded neither addressed the issues themselves rather than the merits of candidate positions.

Append 5: Net positive statements on all topics, by network and candidate

	Cheney	Lieberman	Both	Neither
CBS	+12	+11	+23	-1
NBC	+14	+2	+23	+5
ABC	0	+6	+13	-3

Notes:

1. Net positive statements equal positive statements minus negative statements; neutral statements are not included in the formula.
2. N=373 for all statements. Statements coded "both" were ones in which speakers discussed both candidates. Statements coded "neither" were about neither candidate.

Append 6: Statements evaluating the debate itself, by network and tone

	Positive	Neutral	Negative	Net positive
CBS	6	0	2	4
NBC	6	1	0	6
ABC	3	2	5	-2

Notes:

1. Net positive statements equal positive statements minus negative statements; neutral statements are not included in the formula.
2. N=25 for debate evaluation statements.

Append 7: Emphasis in coverage, by network, proportion of statements and weighted statements

Topic	Network	Proportion of statements	F and p statistics	Weighted statements	F and p statistics
Issues	ABC	.078	F=7.767 p<.001	.21	F=2.873 p<.10
	NBC	.266		.50	
	CBS	.183		.55	
	Across all	.182		.42	
Candidate traits	ABC	.165	F=2.310 p=.101	.36	F=.788 p>.10
	NBC	.203		.38	
	CBS	.104		.24	
	Across all	.161		.33	
Debate performance (style and presentation)	ABC	.165	F=1.071 p>.10	.47	F=.392 p>.10
	NBC	.189		.36	
	CBS	.122		.36	
	Across all	.161		.39	
Evaluations of the debate itself	ABC	.087	F=.072 p>.10	.27	F=1.025 p>.10
	NBC	.049		.13	
	CBS	.070		.16	
	Across all	.067		.18	
Candidates' success in the debate	ABC	.200	F=1.511 p>.10	.50	F=3.951 p<.05
	NBC	.140		.29	
	CBS	.122		.17	
	Across all	.153		.31	
Breaking news about Yugoslavia	ABC	.035	F=3.567 p<.05	.24	F=2.224 p=.11
	NBC	.000		.00	
	CBS	.052		.22	
	Across all	.027		.14	
Other statements	ABC	.270	F=6.776 p=.001	.63	F=1.258 p>.10
	NBC	.154		.64	
	CBS	.348		.93	
	Across all	.250		.73	

Notes:

1. Proportion of statements is the proportion of a given network's statements that were devoted to a given topic. This corrects for unequal N's in statements among netwoks. N's are ABC=115, NBC=143, CBS=115.
2. Weighted statements is the number of lines that a network would devote to a given topic in an average statement. For each network, the sum of these means for each topic would yield that network's average statement length, which is somewhat shorter for NBC. Mean statement lengths are: ABC=2.67, CBS=2.62, NBC=2.29.

Table 1. Difference between post debate and pre-debate measures across condition

	Knowledge (Cheney)	Knowledge (Lieberman)	Favorability (Cheney)	Favorability (Lieberman)	Debate Performance (Cheney)	Debate Performance (Lieberman)	Voting likelihood (Cheney)	Voting likelihood (Lieberman)
Control	4.52**^{a}	3.76**^{a}	2.44**^{a}	1.58**^{a}	2.26**^{a}	-.11^{a}	2.72**^{a}	.78^{a}
CBS	2.83**^{b}	2.74**^{a}	2.24**^{a}	1.75**^{a}	3.35**^{a}	1.50**^{b}	2.00**^{a}	1.70*^{b}
NBC	3.17**^{b}	2.92**^{a}	1.12*^{b}	1.43*^{a}	3.65**^{b}	2.26**^{b}	.82*^{b}	1.61*^{b}
ABC	3.15**^{b}	3.33**^{a}	1.26**^{b}	2.09**^{a}	2.48**^{a}	.61^{a}	1.71**^{a}	1.56**^{a}

Note:

1. The mean difference between pre and post measures is presented in each cell. Mean difference is significant at **$p<.01$ or *$p<.05$.
2. Across column, each post commentary condition is contrasted with control condition. Cells with different superscript letters are different at $p<.05$.

Table 2a. Trait evaluations of candidates

	Character		Competence	
	Cheney	Lieberman	Cheney	Lieberman
Control	30.57^{1a}	31.68^{1a}	53.33^{1a}	48.22^{2a}
CBS	30.46^{1a}	34.75^{2a}	53.96^{1a}	51.89^{1b}
NBC	31.36^{1a}	36.36^{2b}	56.14^{1a}	55.14^{1b}
ABC	29.88^{1a}	37.12^{2b}	55.50^{1a}	54.18^{1b}

Note:

1. Character dimension of the traits includes compassionate, trustworthy, caring and warm with alpha>.90 for both candidates. Minimal score of the index is 4 and maximum is 44.
2. Trait dimension includes intelligence, leadership abilities, moral standards, vision for the future, experience, knowledge about issues with alpha>.91 for both candidates. The index ranges from 6 to 66.
3. Within each column, post commentary viewing conditions are contrasted with control condition. Cells with different superscript letters are different at p<.05.
3. With each row, Lieberman is contrasted with Cheney in terms of both character and competence. Means with different superscript numbers are different at p<.05.

Table 3. Perceived issue proximity, debate performance and overall favorability of candidates

	Issue proximity		Debate Performance		Favorability (post)		Evaluative Complexity	
	Cheney	Lieberman	Cheney	Lieberman	Cheney	Lieberman	Cheney	Lieberman
Control	1.97^{1a}	2.93^{1a}	8.66^{1a}	7.00^{2a}	6.86^{1a}	6.25^{1a}	2.48^{1a}	1.85^{1a}
CBS	2.26^{1a}	3.65^{1a}	9.39^{1b}	8.35^{2b}	6.90^{1a}	6.67^{1a}	2.35^{1a}	1.83^{1a}
NBC	1.28^{1a}	2.86^{2a}	9.32^{1b}	8.85^{1b}	6.24^{1a}	7.29^{2b}	2.25^{1a}	1.19^{2b}
ABC	1.82^{1a}	3.00^{2a}	8.78^{1a}	8.06^{2b}	5.58^{1a}	8.00^{2b}	2.59^{1a}	1.14^{2b}

Note:

1. Within each column, post commentary viewing conditions are contrasted with control condition. Cells with different superscript letters are different at $p<.05$.
2. With each row/condition, Lieberman is contrasted with Cheney in terms of issues, debate performance, overall favorability and evaluative complexity. Means with different superscript numbers are different at $p<.05$.

Table 4. Predicting overall favorability of the candidates for each condition

	Cheney				Lieberman			
	Control (N=30)	CBS (N=31)	NBC (N=36)	ABC (N=33)	Control (N=30)	CBS (N=31)	NBC (N=36)	ABC (N=33)
Character	.68**$_a$	.60**$_a$	.52**$_a$	.62**$_a$	.73**$_a$	.69**$_a$	.60**$_a$	.66**$_a$
Competence	.72**$_a$	.32*$_b$	.40*$_a$	.27$_b$	.56**$_a$	.67**$_a$	.46**$_a$	.70**$_a$
Issue proximity	.46**$_a$	.70**$_a$	.54**$_a$	.70**$_a$	.55**$_a$	.51**$_a$	.53**$_a$	.52**$_a$
Debate performance	.64**$_a$	.43*$_a$	.18$_b$	.31#$_a$	.78**$_a$	.45*$_a$	.53**$_a$	.60**$_a$
Debate evaluation	.34#$_a$	.003$_b$	-.16$_b$	-.22$_b$	-.12$_a$	.23$_a$	.49**$_b$	.39*$_b$

Note:

1. Each cell represents the standardized coefficient of OLS regression. Multiple regressions predicting overall favorability of the candidates were run separately for each condition. For each regression, only one independent variable was entered—character, competence, number of issues winning, debate performance or debate evaluation.
2. For each candidate, coefficients of three networks—CBS, NBC and ABC are contrasted with those of control conditions. Coefficients with subscript letter b in CBS, NBC and ABC indicate that they are significantly different from those in control condition (t>=2.10, p<.05). Coefficients with subscript letter a in CBS, NBC, ABC indicate that they are not significantly different from those in control condition.
3. **p<.01, *p<.05, #p<.10

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Table 5. Hierarchical regression predicting the overall favorability of the candidates

	Cheney	Lieberman
Gender	-.06	-.02
Ideology (Liberal)	-.15*	.12#
Party affiliation (Democrat)	-.10	.18*
ΔR^2(%)	*28.8**	*21.7***
Watch debate on Tuesday	.02	-.03
Campaign involvement	.02	.04
Debate evaluation	.04	.06
ΔR^2(%)	*1.5*	*5.1**
CBS	-.06	-.06
NBC	-.08	.03
ABC	-.16*	.13*
ΔR^2(%)	*3.1*	*6.0**
Performance of debate	.18*	.23**
ΔR^2(%)	*7.0***	*16.5***
Character	-.14	.54**
Competence	.41**	-.15
ΔR^2(%)	*12.8***	*14.0***
Issue Proximity	.31**	.20**
ΔR^2(%)	*5.4***	*2.9***
Overall R^2(%)	*58.6*	*66.2*

Note: #p,.10, *p<.05, **p<.01; N=130.

Figure1: Evaluation of candidates–Character

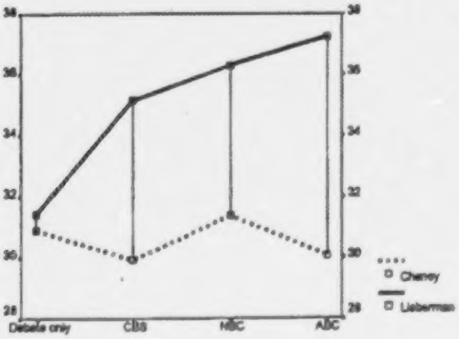


Figure 2:Evaluation of candidates–Competence

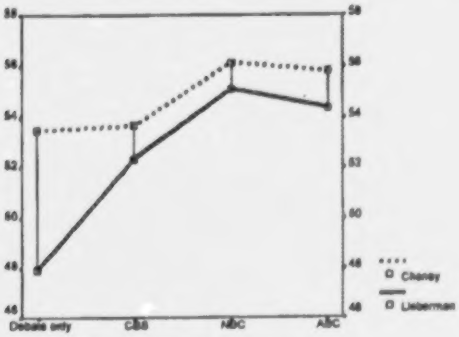


Figure 3: Lieberman vs. Cheney–Trait

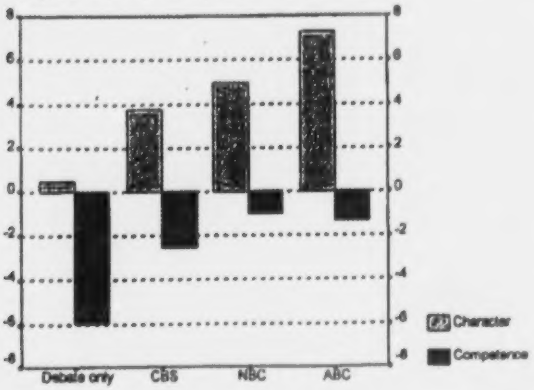


Figure 4: Complexity of trait evaluation

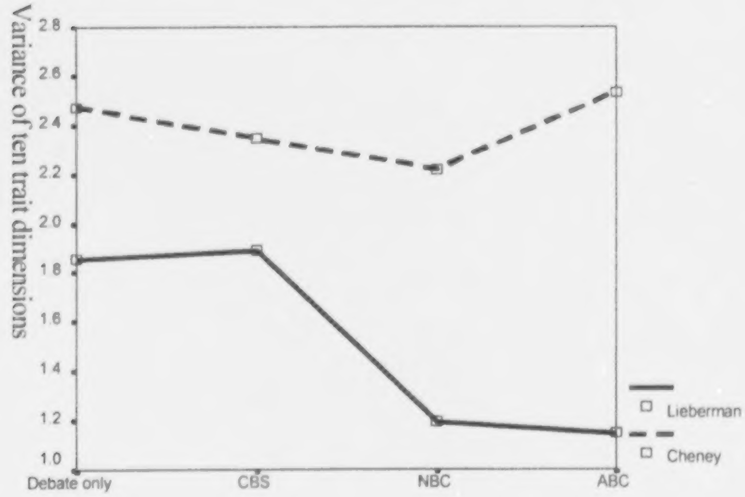


Figure 5: Lieberman vs. Cheney—Issue proximity

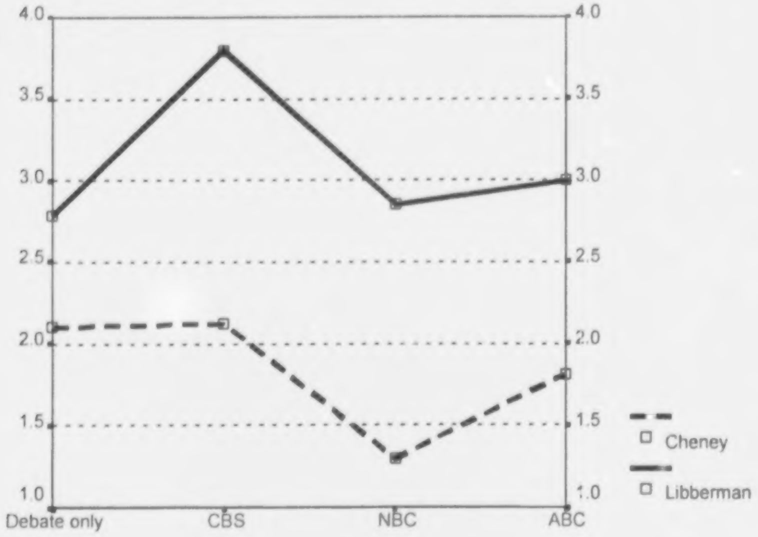


Figure 6: Favorability of candidate

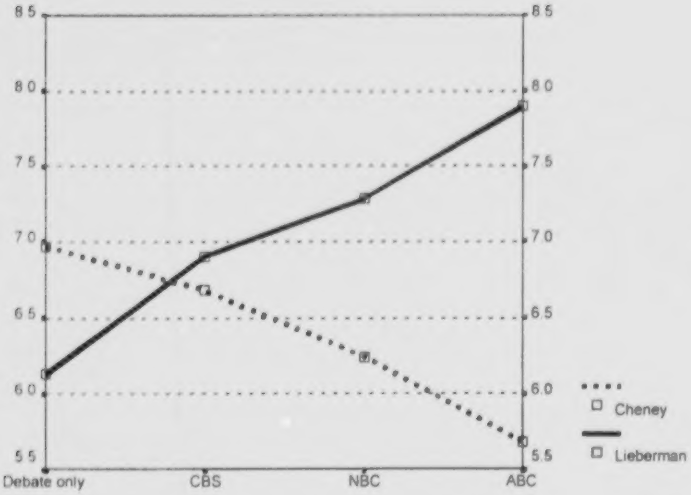
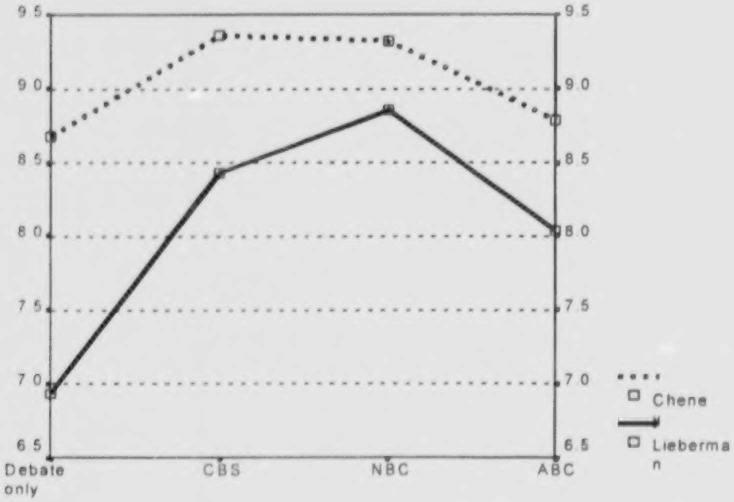


Figure 7: Debate performance of the candidate



Building a Health Promotion Agenda in Local Newspapers: Community Structural Pluralism and News about Breast Cancer

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Building a Health Promotion Agenda in Local Newspapers: Community Structural Pluralism and News about Breast Cancer

Abstract

This study is an analysis of a four year, National Cancer Institute-funded study devoted to promoting mammography screening in a Northern Great Plains state. This study describes the agenda building techniques used by the local volunteer health organizations that were part of the campaign. Findings show that community volunteers were more effective in obtaining coverage in smaller, less structurally pluralistic communities and in communities with weekly newspapers.

Building a Health Promotion Agenda in Local Newspapers:

Community Structural Pluralism and News about Breast Cancer

An enduring question among policymakers and social advocacy groups is "how can my group help shape the media agenda?" Among mass communication researchers, the question becomes "how do community groups, policy makers, and media interact to influence media content" in a process that is described as "media agenda building" (Berkowitz, 1992 p. 87). Both questions stem from a recognition of the mass media's role in a community. Local mass media serve social advocacy groups by disseminating information, by accelerating social movements (Olien, Tichenor, & Donohue, 1989, p. 160), by promoting health-related behavioral changes (Finnegan & Viswanath, 1996), by helping elites accomplish public policy goals (Cook, 1998), and by bringing issues into policymaking arenas (Protess, Cook, Doppelt, Ettema, Gordon, Leff, Miller, 1991).

The present study analyzes newspaper coverage of topics being promoted by a community-based health promotion program. Community-based health promotion programs are initiated at the local level, where groups or coalitions form to address specific health issues. Sometimes referred to as community action groups, people from the community join together for a collective cause. This study is an analysis of the Breast Cancer Screening Campaign: a four year study devoted to promoting mammography screening in a Northern Great Plains state. The Breast Cancer Screening Campaign was financially supported by the National Cancer Institute (CA58659). Among other activities, the campaign developed community action teams to, in part, increase information flow about breast cancer and mammography screening in local media. This study describes the techniques used by the local volunteer health organizations that were part of the Breast Cancer Screening Campaign. Specifically, the paper is an analysis of the ways in which the amount of coverage of the issues being promoted by the health organizations was affected by the social characteristics of the community itself (Donohue, Olien, & Tichenor, 1989; Donohue, Tichenor, & Olien, 1973).

The Breast Cancer Screening Campaign

The purpose of the Breast Cancer Screening project was to increase the number of women in the state who (a) obtain a first-time mammography screening, and (b) continue to obtain annual screenings. The project may have had the additional benefit of reducing breast cancer mortality among women who were screened and who would not have undergone screenings without the campaign, although those data are not analyzed in the present study.

The campaign developed community action teams across the northern half of the state. One objective for the teams was to increase information flow about breast cancer and mammography screening in local media by establishing relationships with local media gatekeepers and becoming a credible source of health information.

Persons in the northern half of the state received the community intervention, whereas persons in the southern half served as no-treatment controls. The community intervention began with a 12-week paid advertising campaign to increase perceptions of personal vulnerability for breast cancer. Forty-one spokespeople were recruited from across the northern counties of the state so that each advertisement was regionalized for the audience. The spokespeople included breast cancer survivors, mammography advocates, and physicians or other health professionals who fit the testimonials presented in the advertisements. The media campaign helped to identify community leaders who would help champion the volunteer outreach activities. Previous research has shown that when community leadership is active in campaigns, more organizations become involved within the community, and the health programs tend to remain active following the withdrawal of federal funding (Finnegan, Bracht, & Viswanath, 1989).

The paid advertising campaign was then followed by two years of community activities led by volunteers recruited through American Cancer Society units, a state Association of Family and Community Education clubs, the medical community, and other community groups. The final year focused on data collection and analysis, and transition of the intervention efforts.

Health Promotion and Agenda-Building Strategies

The general public relies on the media as an important source of health information (Freimuth, Greenberg, DeWitt, & Romano,1984 ; Toggerson, 1981; Wade & Schramm, 1968). Reagan & Collins'

(1987) research showed that for health care information in two small communities, the newspaper outranked other media, being listed just below physicians, family, and relatives. Studies by Johnson and Meishcke (1992a, 1992b) clearly identified media as a main source of cancer-related information.

In efforts to promote breast cancer early detection, health communicators turn to the media for three primary purposes: (1) as part of a campaign to prompt screenings and promote screening behavior; (2) to add the topic of breast cancer screenings to the "public agenda;" and (3) "advocating for policy and institutional changes" that pave the way for increased rates of screening (Freimuth, 1995, p. 79).

Results of studies using community-based health promotion programs infer that if a relationship between the media and a health source is effectively established and maintained, it will benefit the public's health. Backer, Rogers, and Sopory (1992) described "two of the most successful and best-documented health behavior change campaigns that included significant mass media components: the North Karelia Project in Finland, and the Stanford Heart Disease Prevention Program in California" (p. 7). The effects of the health promotion project in North Karelia Project is described "like a stalactite dripping, dripping, dripping. Slowly, the audience effects are built up" (p. 9). Brownson, Remington, & Davis (1993) reported results from Stanford's Three Community Study to exemplify "the influence of a large-scale media intervention on health behavior" (p. 94).

The Social Context of Media Agenda Building

Local newspapers are generally recognized as an effective means of conveying complex information about health related issues. For this reason, a media agenda building strategy is often included in most health communication campaigns. However, other social advocacy groups have experienced mixed levels of success in obtaining local media coverage. Variation in coverage has been attributed to a number of factors relevant to the social context of the group and its community, including the group's bureaucratic complexity (Corbett, 1998); the group's "deviance" from social norms (Shoemaker, 1984); the group's extremism and militancy (McLeod and Hertog, 1999); and the group's relationship to the local status quo (Breed, 1958).

Often, groups tend to perceive bias in media coverage of their organization (Gunther, 1992; Perloff, 1989). Ultimately, however, media coverage tends to reinforce existing conditions of status and power within the community (Breed, 1958; Bennett, 1988). Contrary to the "watchdog" metaphor in which news media are viewed as being separated from other social institutions, news media are primarily dependent upon and supportive of authoritative groups (Donohue, Olien, & Tichenor, 1995).

News media represent a "source-based reality" in which authoritative sources have the advantage in building the news media agenda (Doppelt, 1992, p. 114). Groups with disproportionate access to media gatekeepers tend to have disproportionate power to not only receive media coverage, but to also receive favorable coverage. When purposive communicators generate news, they are given input into how the content is framed, both in "selection and salience," with salience described by Entman (1993, p. 52) as "making a piece of information more noticeable, meaningful, or memorable to audiences." Thus, groups are more likely to obtain favorable media coverage if they a) demonstrate a measure of social legitimacy by using local opinion leaders as spokespersons, and b) actively promote their issues with the media.

In the present study, community health promotion groups were activated in the northern half of counties in the state (the intervention region). News media in the intervention region received story ideas, news tips, and press releases from volunteers in the community. These "information subsidies" provided news media with the raw material needed to reduce the cost of reporting the news, particularly when the source or the topic is generally considered to be newsworthy (Berkowitz, 1992). Gatekeepers in the intervention communities can be expected to publish at the very least a sample of the information made available to them (Geiber, 1964, p. 175).

Given the previous discussion, this study proposes the following hypothesis:

H_1: The amount of newspaper content about breast cancer and mammography screening will be greater in newspapers within the intervention region of the Breast Cancer Screening Campaign than in newspapers in the control region.

Newspapers outside of the intervention region were also expected to include articles about breast cancer simply because it is an obtrusive issue which affects a large number of individuals each year, and because it was the subject of ongoing national media attention (Corbett & Mori, 1999). However, the amount of published news is expected to be less outside of the intervention area simply because fewer, if any, locally based stories about breast cancer and mammography will be made available for selection.

Community Structural Pluralism and Newspaper Content

In 1973, Donohue, Tichenor, and Olien expressed concern that while it is still important to study the "micro-processes of mass communication," it is "equally important to take a macro-view of mass media as interdependent parts of a total social system in which they share facets of controlling, and being controlled by, other subsystems" (p. 652). In this perspective, the newspaper is conceptualized as being integrated within, rather than separate from, powerful groups within the community. In the present study, the social characteristics of the community would be expected to be associated with on community action teams' success in gaining newspaper coverage of the topics of breast cancer and mammography screening. This is because of the relationship between community structural pluralism and the complexity of the local power structure. Community structural pluralism is defined by Tichenor, Donohue, and Olien (1980, p. 40) "...as the extent to which one community is characterized by a greater diversity of potential sources of social power than another community" and is often indicated by the size and diversity of the community's population and economy.

Research in community structural pluralism provides further understanding of how the community's information delivery system intertwines with a community's organized social power. Increasingly, there are more "purposive communicators" (Tichenor, Donohue, and Olien, 1980, p. 15) who are seeking to use the mass media to disseminate understanding of their issue and establish it on the public agenda. In larger, more pluralistic communities, there are more diverse power structures, and a wider range of groups and individuals who might serve as news sources (Hindman, Littlefield, Preston, & Neumann, 1999). Power in larger communities is more diffused across social segments and decisions are usually made through more formal group structures. Community size adds to the difficulty of mobilizing "critical size for social organization and influence" (Tichenor, Donohue, and Olien, 1980, p. 53). For example, it is easier to mobilize 10 percent support behind an issue in a community of 1,000 than it is to mobilize 10 percent support in a community of 100,000.

In the smaller community, the power structure tends to be smaller and less diverse, and similarly, the range of news sources is often more limited. In this type of community, it is likely that individuals "who are socially powerful in one sector tend to be powerful in others" (Tichenor, Donohue, & Olien, 1980, p. 51) and decisions may be made more informally. Smaller, less diverse communities typically have a more centralized power structure (Donohue, Tichenor, & Olien, 1973). Stone & Mazza (1977) found that community size could predict the inclination of newspaper publishers to maintain consensus with the community power structure, concluding that the need for consensus increased as the community size decreased.

Because of the differences in community power between larger and smaller communities, the way information is presented differs as well (Olien, Donohue, & Tichenor, 1978). For example, it was found by Griffin, Dunwoody, and Gehrmann (1995) that newspapers in less pluralistic communities were more apt to present solutions to an issue, while newspapers in more pluralistic communities were more likely to "frame those stories in the context of a problem" (p. 456).

Additionally, communities with differing pluralism will also perceive local versus nonlocal influence and impact differently. Donohue, Olien, & Tichenor (1985) found that less pluralistic communities are more concerned with the local angle and impact, while more pluralistic communities were more apt to perceive the external impact on their community. Newspapers in smaller communities tend to include a larger proportion of conflict stories involving outside agencies and organizations than do newspapers in larger, more pluralistic communities (Hindman, 1996).

Community structural pluralism also influences general news reporting. In larger, more diverse communities, a wider range of actors can serve as legitimate sources, reflecting the greater complexity and formality of the local power structure. News media in larger communities devote more space to national and regional news, rely more heavily on news with a conflict angle, and have a more widely distributed power structure with more competing interests (Finnegan, Viswanath, Kahn, & Hannan, 1993; Hindman, Littlefield, Preston, & Neumann, 1999; Tichenor, Donohue, & Olien, 1980).

In contrast, newspapers in smaller, less diverse communities tend to emphasize stories which promote consensus around an issue, rather than conflict (Hindman, 1996; Olien, Donohue, & Tichenor, 1968; Tichenor, Donohue, & Olien, 1980). Most smaller community newspapers publish weekly, instead of daily, and carry a higher ratio of local news.

Community structural pluralism is also related to the types of media available. Olien, Donohue, and Tichenor (1978) found a clear correlation between community structure and the media environment. Obviously, smaller communities are often served exclusively by weekly newspapers, and larger communities tend to be served by dailies. They also confirmed that community structure influences what citizens expect from the media, how citizens use media, and how content is selected and framed by news gatekeepers.

The second hypothesis, then, is:

H_2: The amount of newspaper content about breast cancer and mammography screening will be greater in a) newspapers serving less pluralistic communities than in newspapers serving more pluralistic communities, and b) weekly newspapers than in daily newspapers.

Newspapers reflect the diversity and complexity of the local power structure. In smaller communities, and in communities served by weekly newspapers, the power structure is generally more centralized, with a handful of key individuals exerting wide influence over local community projects. The community action teams in the present study deliberately identified community leaders to serve as spokespersons, which was expected to increase the chances that media coverage would follow. In larger, more pluralistic communities, it is less likely that any one individual would exert influence across all local institutions. Newspapers in more pluralistic communities, and daily newspapers, would be expected to reflect this diversity in the power structure by covering a wider range of perspectives and a greater number of issues. Ultimately, it is expected to be more difficult to obtain coverage in a more pluralistic community, and in a community served by a daily newspaper.

Method

Content analysis was used to systematically measure newspaper coverage about breast cancer and mammography screening comparing pre-intervention and intervention coverage of newspapers within the intervention and control areas of the Breast Cancer Screening Campaign.

For the content analysis, two samples were drawn over time from newspapers within the state. Item selection was limited to newspaper articles and corresponding graphics and photographs that identify breast cancer or mammography in the headline, subhead, or first paragraph of copy. Acceptable references included the phrases breast cancer, breast health, mammogram, mammography, and breast screening. Exception was made for feature stories focused on breast cancer or mammography, but where the reference was not made in the headline or initial paragraph.

The data collection process was done through a state newspaper association clipping service, a firm that hires and trains employees for this specific task. Pre-intervention clippings included a deliberate sample of all newspapers from September 1, 1993 through August 31, 1994. The intervention sample was drawn from September 1, 1995 through August 31, 1996 from the same list of newspapers.

Each article provided by the clipping service was identified by a number and then coded for (1) name of publishing newspaper, (2) city of publishing newspaper, (3) county of publishing newspaper, (4) weekly or daily newspaper, (5) date article was published, (6) length as calculated by column inch of the newspaper's standard column size, (7) and story orientation, identifying if the content and source appeared to be local, state, or national.

For each newspaper included in the study, the number of stories and the column inches of stories with reference to breast cancer and mammography were summed. To test H_1, the pre/post control group design provided for comparison of newspaper content from the intervention region to the control region before and during the intervention period.

To test H_2, communities with newspapers were ranked using a pluralism scale to assess news coverage differences between newspapers from communities with different levels of community structural pluralism, and between weekly and daily newspapers (Olien, Donohue, & Tichenor, 1968). Data for the community structural pluralism measure were drawn from a census data file, including population of cities and counties, percent of workforce not in agriculture, and number of residents with a bachelor's degree or higher (Finnegan, Viswanath, Kahn, & Hannan, 1993; Hindman, 1996). The four variables were standardized and added to form an index. Chronbach's alpha for the pluralism scale was .88. To test H2, the pluralism scale was dichotomized to represent communities with higher versus lower pluralism levels.

Geographical coding and restrictions. Because this research is directly linked to the Breast Cancer Screening Campaign research project, it was important to structure the geographical area reviewed according to the intervention and control areas of that study.

Results

The first hypothesis was stated as:

H_1: The amount of newspaper content about breast cancer and mammography screening will be greater in newspapers within the intervention region of the Breast Cancer Screening Campaign than in newspapers in the control region.

Table 1 shows the results of the test of the hypothesis. Two measures of the dependent variable are shown: number of stories, and column inches of stories. The test of differences between the means are shown in Table 1 for two time periods: the year before intervention began, and the year during which community action teams were active, labeled in Table 1 as "during intervention." The bottom third of Table 1 shows change scores, which represents the differences between intervention coverage and pre-intervention coverage levels.

To support the hypothesis, the mean number of stories and the mean number of column inches should be significantly greater among the intervention communities than among the control communities during the intervention time period. Further, the differences between the pre-intervention levels of coverage and the intervention levels should be significantly greater among the intervention communities. Table 1 shows partial support for the hypothesis.

Table 1

Mean Column Inches and Mean Number of News Stories About Breast Cancer in Intervention Versus Control Communities

	Control communities	Intervention communities	*T*-value (control minus intervention)
Before intervention			
Column inches (standard deviation)	153.1 (235.0) N:37	264.5 (623.0) N:52	-1.04
Number of stories	2.2 (3.2) N:37	3.25 (6.6) N:52	-.88
During intervention			
Column inches	123.8 (251.2) N: 37	249.1 (375.5) N:52	-1.9+
Number of stories	1.35 (2.55) N: 37	3.02 (4.65) N: 52	-2.0*
Change (during intervention minus before intervention)			
Column inches	-29.3 (167.5) N: 37	-15.5 (420.8) N: 52	-.19
Number of stories	-.86 (2.0) N: 37	-.23 (3.2) N: 52	-1.1

Note. + = $p < .05$, one tail, * = $p < .05$, ** = $p < .01$, *** = $p < .01$. Standard deviations are shown in parentheses under the mean scores.

As hypothesized, the only significant differences between intervention and control communities occurred during the intervention period. The top third of Table 1 ("before intervention") shows that there were no significant differences between intervention and control communities in either the column inch measure or in the number of stories measure.

In partial support of the hypothesis, the middle third of Table 1 ("during intervention") shows that intervention communities had significantly greater mean levels of column inches (249.1 versus 123.8, $T_{diff} = -1.9$, $p < .05$ one tail) and significantly greater numbers of stories (3.02 versus 1.35, $T_{diff} = -2.0$, $p < .05$, one tail) than did newspapers from the control communities. However, when controlling for the pre-intervention levels of coverage, as shown in the change scores at the bottom of Table 1 none of the differences was statistically significant.

The change scores show that there was more coverage of breast cancer and mammography in all of the communities during the year before the community action teams became active (September 1, 1993, through August 31, 1994). This unexpected finding is perhaps a reflection of the decline in national news coverage of breast cancer issues. Corbett and Mori (1999) noted a peak in breast cancer coverage in 1994. This peak in national newspaper coverage coincided with news of the discovery of a "breast cancer gene" as well as ongoing coverage of celebrities talking about their breast cancer (p. 237). Although news coverage of breast cancer was declining in both control and intervention communities, the decline appeared to be less in the intervention communities, but not by statistically significant margins. Thus, hypothesis one was partially supported.

The second hypothesis was:

> H_2: The amount of newspaper content about breast cancer and mammography screening will be greater in a) newspapers from less pluralistic communities than in newspapers from more pluralistic communities, and b) will be greater in weekly newspapers than in daily newspapers.

Table 2 shows the results for the first part of the hypothesis which compares the change in the amount of coverage among less versus more pluralistic communities in intervention versus control regions. To test the hypothesis, a t-test was performed comparing the mean change in the level of coverage for intervention versus control communities, first among the less pluralistic communities, and then among the more pluralistic communities. The change score was computed as the difference in the amount of coverage from the pre-intervention to the intervention time period. Coverage was measured as column inches of stories and as number of stories.

As hypothesized, Table 2 shows that there was a significant difference between intervention and control groups only among the less pluralistic communities, on both measures of the dependent variable.

Table 2

Change in Mean Column Inches and Mean Number of News Stories About Breast Cancer in Intervention Versus Control Communities, by Community Structural Pluralism

	Control communities	Intervention communities	T-value (control minus intervention)
Change in column inches			
Less pluralistic communities	-22.1 (151.9) N: 25	83.7 (195.5) N:19	-2.0*
More pluralistic communities	-44.3 (202.7) N: 12	-72.6 (501.6) N: 33	.19
Change in number of stories			
Less pluralistic communities	-.52 (1.5) N:25	.63 (1.9) N:19	-2.3*
More pluralistic communities	-1.6 (2.6) N: 12	-.73 (3.7) N:33	-.73

Note. All values are change scores, representing during intervention levels minus before intervention levels. Standard deviations are shown in parentheses under the mean scores.
* = p< .05, ** = p< .01, *** = p< .001.

Table 2 shows that the less pluralistic communities within the intervention region had gains in the amount of coverage of breast cancer and mammography topics while the other communities (more pluralistic intervention communities and all communities outside of the intervention region) showed declining levels of coverage. In other words, when compared with pre-intervention levels, there were more column inches and more stories about breast cancer and mammography in local newspapers in the smaller, less pluralistic communities in which local health volunteer organizations were active. The increase in coverage among newspapers in less pluralistic communities is particularly striking when one notes that coverage was declining over the same periods in more pluralistic communities, and among communities in which volunteers were not active. It should be noted that, among more pluralistic communities in which volunteers were active (intervention communities), the decline in coverage as measured by numbers of stories was less than among more pluralistic communities outside of the intervention region (-.73 versus -1.6), but not by statistically significant margins. However, the intervention communities actually showed a larger level of decline in column inches than did the control communities (-72.7 versus -44.3), but again, the differences were not reach statistically significant levels.

The second part of hypothesis 2 is shown in Table 3, in which the change in the amount of content in weekly versus daily newspapers is compared across intervention and control communities. In support of the hypothesis, significant differences between intervention and control groups emerged only among weekly newspapers. Weekly newspapers in which community action teams were active gained coverage of breast cancer and mammography topics where as the weekly newspapers in the control communities, and daily newspapers in both control and intervention communities saw a decline in coverage.

Table 3

Change in Mean Column Inches and Mean Number of News Stories About Breast Cancer in Intervention Versus Control Communities, by Newspaper Frequency of Publication

	Control communities	Intervention communities	T-value (control minus intervention)
Change in column inches			
Weeklies	-25.3	44.9	-1.9+
	(135.0)	(183.4)	
	N: 33	N:48	
Dailies	-62.0	-739.5	.99
	(375.3)	(1314.1)	
	N: 4	N: 4	
Change in number of stories			
Weeklies	-.58	.42	-2.5*
	(1.4)	(2.2)	
	N:33	N:48	
Dailies	-3.3	-8.0	1.6
	(4.3)	(4.1)	
	N:4	N:4	

Note. All values are change scores, representing during intervention levels minus before intervention levels. Standard deviations are shown in parentheses under the mean scores.
+ = p<.05 (one tail), * = p< .05, ** = p< .01, *** = p<.001.

Table 3 shows a pattern that is consistent with Table 2: the only significant difference between intervention and control communities is among the weekly newspapers. It also shows a decline in coverage among daily newspapers in both intervention and control communities, and a decline in coverage among weekly newspapers in the control communities. It must be pointed out that the small number of dailies in the two groups (N:4) contributed to the lack of statistical significance in the test of the difference between the two means.

In order to determine the independent contribution of the frequency of publication and structural pluralism index variables, a series of regression equations were tested in which frequency of publication and pluralism served as independent variables, and the change scores (level of coverage after intervention minus level of coverage before intervention) were dependent variables. The results are shown in Table 4.

Table 4

Frequency of Publication and Structural Pluralism Regressed on Change Scores

Change in column inches

	Control Communities	Intervention Communities
Independent variables	β	β
Pluralism index	.184	-.27*
Frequency of publication (daily)	-.172	-.37**
Adjusted R^2	.029	.28
F	.49	10.9***

Change in number of stories

	Control communities	Intervention communities
Independent variables	β	β
Pluralism index	.03	-.10
Frequency of publication (daily)	-.44*	-.66***
Adjusted R^2	.134	.48
F	3.8*	24.7***

Note. Dependent variables are change scores, representing during intervention level of coverage minus before intervention levels. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 4 shows that the frequency of publication variable has the largest coefficients in the four regression equations, which indicates that it explains the most variance in the content measures when the other independent variable is controlled. When the change scores are expressed as column inches, however, structural pluralism and frequency of publication variables were both significantly associated with the dependent variable.

Consistent with the hypotheses, and shown in the adjusted R-square measures in Table 4, the largest amounts of variance were explained by regression equations based on the intervention community content measures. Also consistent with the hypotheses, the coefficients with statistically significant levels had negative values which indicates that weekly newspapers in the intervention communities, and newspapers from smaller, less pluralistic communities within the intervention region had greater levels of content change than did newspapers from larger, more pluralistic communities and daily newspapers.

Contrary to hypotheses, when using the "number of stories" measure as the dependent variable within the control group, a significant amount of variance was explained by the overall equation, however, only the frequency of publication coefficient was statistically significant. Thus, weekly newspapers were associated with lower levels of decline in coverage, even in the communities outside of the intervention region.

Summary and discussion

The present study sought to explore the influence of community conditions on media coverage of topics being actively promoted by local volunteer health organizations. On a more general level, the paper attempts to explain the influence of community structural pluralism on media agenda building.

Findings show that newspapers in communities with active groups of local volunteers ("intervention communities") had significantly greater levels of content relevant to breast cancer and mammography than did newspapers in communities without active volunteers ("control communities"). These findings support the idea that that newspapers in general respond to the "source created reality" which in this case, involved purposive communicators promoting the topic of breast cancer and mammography (Doppelt, 1992).

The community health promotion groups were successful in obtaining media coverage of their topics for a couple of reasons. First, their work was preceded by a paid advertising campaign that introduced the breast cancer screening messages into the intervention communities. Second, the campaign identified local community leaders who also served as media contacts in support of the volunteer outreach activities. The leaders were credible spokespersons because they were also breast cancer survivors, mammography advocates, and local physicians

Further, the study shows that when comparing "intervention" to "control" groups, there were significant differences only among less pluralistic communities, and, more consistently, among communities with weekly newspapers. Thus, community volunteers were more effective in obtaining coverage in smaller, less structurally pluralistic communities and in communities with weekly newspapers. Weekly newspapers serve their smaller, less diverse and more localite communities by focusing on local news. The resource constraints facing the smaller, less organizationally complex newspapers result in heavy reliance on news subsidies in the form of news releases, announcements, and community calendars. The volunteers in the intervention communities were more successful with weekly newspapers because the volunteers actively provided the type of subsidy that weekly newspapers both wanted and needed: local stories featuring prominent individuals discussing a topic of that is personally relevant and to a large proportion of the readers.

The implications of this study are significant for individuals concerned with building the agenda of local media. Based on these findings, it appears that more success in agenda building might be experienced among individuals working with weekly newspapers and newspapers from smaller, less pluralistic communities, particularly when the community groups have enlisted the help of local spokespersons. Coverage of stories about breast cancer and mammography increased in the smaller, less pluralistic communities and in the weekly newspaper communities which health promotion volunteers were active (intervention communities), even as the coverage was declining in the other types of communities.

Conversely, it is more difficult to build a news agenda in a larger, more pluralistic community served by a daily newspaper. Larger communities with daily newspapers have more diverse power structures with more special interest groups vying for attention and coverage. In smaller communities, and in communities served by weekly newspapers, there is a greater emphasis on stories featuring local individuals and organizations, and there is less competition for media attention.

Daily newspapers reflect the greater diversity of the community, and respond to the community's greater needs for specialized information. Groups seeking to build a media agenda in daily newspapers and in more pluralistic communities must rely on a combination of local, regional, and national sources in order to fully engage the local newspaper. Media agenda building in a larger city would be particularly successful during those rare occasions in which local, state, and national news converges on a topic that is relevant to the group's agenda. This is because daily newspapers tend to represent the more pluralistic communities' wider sphere of influence by including news from the community and the world.

As this study has shown, it is particularly difficult to generate media interest in a topic that, for whatever reason, appears to be on its way out of the "public arena" (Hilgartner & Bosk, 1988). The current study coincided with an overall decline in national media attention to breast cancer (Corbett & Mori, 1999).

Media agenda building is the process of community groups, policy makers, and media interacting to shape media content (Berkowitz, 1992 p. 87). The assumption is that agenda building involves introducing new topics to the community. However, it could be argued that waning media interest in a group's topic is a more common condition. Local media can be expected to devote a token amount of attention to a health promotion group's topic, but eventually move on to other stories with a more current news "peg." The common challenge for groups seeking to influence content is to convince media gatekeepers of the value of ongoing coverage of enduring and underreported problems related to public health. Agenda building, then, can be conceptualized more fully as including agenda *maintenance* processes as well as agenda building processes.

In most cases, the difficulty in building and maintaining news agendas in larger, more pluralistic communities is not, as some interest groups might argue, the result of a media bias against the goals or ideology of the groups themselves. Instead, it is merely a reflection of the diversity and complexity of the community, as well as a reflection of the prominence (or lack of prominence) of the issue itself in the national context.

On the other hand, a small amount of coverage in the larger community may have a considerable impact on the advocacy group's intended audience, even if the group does not achieve the level of prominence and visibility in that it might expect to experience in smaller communities served by weekly newspapers. In either case, locally-based social advocacy groups seeking to shape media agendas and, ultimately, to improve the quality of individual lives in the community, can increase their chances of success by first analyzing the social context of the community. Of particular relevance to locally-based health promotion groups is identifying the sources of community leadership and influence, understanding the diversity of the local power structure (Finnegan, Bracht, & Viswanath, 1989), recognizing the different goals and functions of weekly versus daily newspapers and, based on the present paper, recognizing the position of the particular topic in the national, state, and local news arena (Hilgartner & Bosk, 1988).

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Assessing the Impact of Recession News:
A Time-Series Analysis of Economic Communication in Japan, 1988-1999

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Reassessing the Impact of Recession News:

A Time-Series Analysis of Economic Communication in Japan, 1988-1999

Abstract

This study investigated three critical variables in economic communication – the state of the economy, recession coverage, and consumer confidence. These time-series were found to be cointegrated with one another during the time period. The economic condition that affected how the three variables interacted in the last U.S. recession did not generate a similar effect on the Japanese counterpart. The newspapers' coverage of recession in Japan followed the economy and the public's sentiment at different lags. The Japanese's confidence level was influenced by the economic indicator but not by the recession coverage regardless of the economic condition. The study also discovered no substantial media effect and discussed several factors that might have contributed to the phenomenon.

Reassessing the Impact of Recession News:
A Time-Series Analysis of Economic Communication in Japan, 1988-1999

INTRODUCTION

"Media malady" was often invoked by critics during changing, unpredictable economic situations. This argument is based on the idea that the media, by attention to (if not obsession with) the possibilities of an economic recession, help to bring about a real downturn. During the last U.S. recession, the *Washington Post*'s Kurtz (1990) was prepared to acknowledge media influence, but others (Gergen 1992; Samuelson 1990) argued that both media coverage and public opinion were driven by events; the economy really was in retreat, a condition that drove both reporting and public response. As the threat of recession returned a decade later, the *Economist*, in its usual style of creative reporting, plotted the frequency of the "r-word" in the *New York Times* and *Washington Post* alongside the state of the economy and concluded that the two followed one another but not speculate on any causal effect ("Rrrrrrrecession?" 2001).

A number of empirical studies have examined the tripartite relationships among the state of the economy, recession coverage, and the public opinion towards the economy based on the data generated from the last U.S. recession. The findings derived from the studies, however, have led to inconsistent conclusions, even though overall media effect was found. This study takes a recent recession case, Japan, to reexamine the tripartite relationships in another country. In so doing, the researchers hope to ascertain the impact of recession coverage across the national boundaries.

Covering a complex issue is hard, especially if the reporting itself becomes part of the story. Economic situations are a good example of stories that challenge journalists' expertise and judgment. On the one hand, it is imperative to keep the audience abreast of the current status of the economy; on the other, emphasis on future conditions can become self-fulfilling prophecy. In the early 1990s, media were blamed for harming an already weakened economy. However, others defended that their stories simply reflected hard facts and did not intentionally influence the economy. Therefore, the relationship between news coverage and the state of the economy, a relationship that has yielded debates about their mutual influences, is worth thorough investigation.

In addition to the usual relationship between media content and public effect, this study also examines the relationship between the economy and public perception. The state of the economy itself can be affected by public confidence (Katona 1964), because policy is influenced, in part, by public opinion. Linden (1982), however, argued that the public is more sensitive to day-to-day economic experiences than to the news: people's perception of the economy is shaped by what they observe in their everyday lives, not what they read in the papers. Thus, at issue here is whether the public's perception drives the economy or vice versa, and which direction of the influence is more significant.

The third relationship in this project is no less important. Media effect is the most important area in mass communication research. Studies have shown that news can generate a wide range of impacts on audiences. On the other hand, the traditional function of news is to mirror public opinion and to monitor social change—surveillance is one of the media's primary functions (Wright 1960). For example, Gonzenbach (1996) found that news media reflected public opinion on drug issues and that the reverse direction of impact was not as significant.

News coverage, public opinion, and economic situation should be examined simultaneously because they can all reinforce and influence each other over time; in addition, these variables are not likely to be endogenous under any circumstance. Particularly because the media coverage of the economy is an obtrusive issue—in addition to media the public can obtain information about the economy from other sources—reality cues must be taken into account when media effect is assessed.

LITERATURE REVIEW

Conventional media effect studies usually assess public opinion change across two points in time, ignoring the potential long-term impact and the fluctuation between the times examined. Brosius and Kepplinger (1990), in their review of agenda-setting studies, pointed out that longitudinal analyses are quite rare and may complement traditional studies rather than challenge them. Not until the 1990s did researchers examine the changes in public opinion on certain issues over longer periods (e.g., Gonzenbach 1992; Lars and Zhu 1996; McCombs and Zhu 1995) or use time-series analysis methods to trace media's impact (e.g., Brosius and Kepplinger 1990; Brosius and Weimann 1996; Iyengar and Simon 1993; Willnat and Zhu 1996). These recent studies indicate that public opinion really does shift at different times because of changing political climates, governmental policies, or media coverage.

Only a handful of studies have specifically tackled these multifaceted relationships among news coverage of recession, the state of the economy, and the public's perception. Stevenson, Gonzenbach, and David's (1994) study, a pioneering work on this topic, found cyclical effects between news coverage and people's perception toward the economy. More specifically, they discovered that, when economic reality is controlled, public opinion strongly influenced media coverage, but the media in turn followed the upsurge of public concern and influenced back at a later date. Overall, however, they found that the public's evaluations of the economy had a stronger effect on media coverage than vice versa.

Using advanced vector autoregression (VAR) test, Blood and Phillips (1995) also examined the same three variables but produced a different result from Stevenson et al's. Among the relationships they examined, after controlling for the economic Leading Indicators, only the number of news articles that contained recession headlines was found to influence consumer sentiment (at lags 2 months and 4 months). Other than this notable finding, none of other relationships examined turned out to be statistically significant. In the same year, Goidel and Langley (1995) conducted a similar study that explored the impact of economic news on the public's evaluation and its repercussion on presidential approval. With a measure of the story's tone, they found that negative economic news was more likely to reflect the economic situation in the 1981-92 period. In addition, when various economic indicators were held constant, negative stories were found to influence public appraisal of the economy. Bowing to the limitation of the method used, however, they did not distinguish the magnitudes of influence generated by news and reality, respectively.

As Blood and Phillips (1995), Wu, Stevenson, Chen, and Güner (1997) also utilized VAR analysis to investigate the three-way relationship among the three variables during the last U.S. recession. They extended the length of their sample to 10 years (1987-1996) and investigated their data in both downturn and recovery periods. Their research findings showed that the relationship among the three variables is different across the two distinct periods. Americans were more likely to be affected by recession news during the downturn period than the recovery period. The media, on the other hand, were more prone to the impact of the public sentiment during the slump than the growth period. Even though overall, they pretty much reflected the state of the economy.

Haller and Norpoth (1997) took a slightly different approach to gauge economic news's impact on people's appraisal of the economy. Using U.S. data from 1979 to 1990, they discovered that news played only a modest role in providing people with economic information; news exposure did not lead to a significant improvement of capability in assessing economic situation. Measures of economic conditions such as unemployment and inflation contributed more to economic opinion. The problem of reciprocal influence between news and public evaluation, however, was not resolved by this study. In addition, the operationalization of news as news recall might introduce a problem of validity. Their study period, which does not include the last U.S. recession, also points to a pressing need for the current study.

A number of studies conducted by political scientists also tackled the relationships among the variables that relate to this study. Behr and Iyengar (1985) investigated the determinants of news coverage and public concern, respectively, using energy, unemployment, and inflation as the test issues. Their results indicated that overall news coverage was not influenced by shift of public concern. Rather, media coverage was more likely to be led by reality and relevant events. Public concern, on the other hand, was determined more by reality indicators than by news coverage, indicating the limited effect of media.

MacKuen, Erikson, and Stimson (1992) examined the impact of people's sentiment toward the economy upon the ratings of presidential approval. With the discovery of the impact of business expectation on political evaluation, they set out to examine the sources of influence on business expectation. After controlling for economic reality, news recall was found a significant predictor, and that influence was powerful enough to remove the economic indicator from the prediction model. Several factors that might considerably influence the results, however, are worth pointing out. Data used in this study, unlike other studies, were quarterly; secondly, traditional regression methods rather than time-series analysis was used.

Additional support of the thesis of the media's influence in shaping economic evaluations can be found in Mutz's (1992) study. In line with Haller and Norpoth (1997), she discovered that personal experiences such as unemployment, along with local newspaper coverage, contributed to an individual's perception of the unemployment issue; with economic problems at the national level, people relied on media for information and making political judgment. The results indicated an interesting pattern of information sources that people use to help form their opinion. Nevertheless, the author's acknowledged limitations of sample location, time frame, and cross-sectional method are a disappointment.

It is apparent that past studies have yielded strikingly inconsistent and, in some cases, ambiguous results. Most of the studies indicated that media affect people's perception about the economy, but it is uncertain which of the two variables, news coverage or the economic reality, is more potent. For example, MacKeun et al. (1992) and Behr and Iyengar (1985) drew opposite conclusions on the impact of news and reality on the public. The contradiction between these empirical studies is probably derived from the adoption of distinct methods, different sample periods, varied operationalizations of news coverage and people's perception toward the economy, and different observation units and lags. Our research is designed to resolve the flaws of past studies by investigating further the complex relationship using data from Japan where the most serious recession in decades has been observed.

METHODOLOGY

Data. This study utilized data sets from various sources. The monthly leading index of Japan's economy came from the Economic Planning Agency of the Japanese government. The Japanese public perception about the state of the economy is represented by a monthly survey data conducted by the *Jiji* press. The survey uses a set of five-category, Likert-scale answers to capture the aggregate evaluation of the economy. The news coverage about recession derived from *Asahi Shinbum* and *Yomiuri Shinbum*, two of the most influential newspapers in Japan. Each paper boasts reaching more than 8 million readers across the country.[1] The researchers searched news stories from the two papers that contain the key word, recession ("Fukyo" in Japanese), in the headline or lead paragraph. The sum of the tallies of both papers' coverage becomes the variable that represents media coverage of the issue. This method, although far from perfect, is chosen because we intended to make the data comparable with that of other studies that were completed in the United States.

Three variables – recession news (NEWS: y_1), economic indicator (EI: y_2), and consumer's confidence index (CI: y_3) – become the focus of this study. As in Blood and Phillips (1995) and Wu et al. (1997) we treated these variables as a (3×1) vector stochastic process $Y_t = (y_{1t}, y_{2t}, y_{3t})'$ $t = 1,\ldots,T$. We are primarily interested in determining how these variables move together across times and whether or not there exist any causal relationships among the three.

Since the goal is to detect any causal relationship, whether the time-series are stationary or nonstationary should be determined first. We conducted the now standard augmented Dickey-Fuller (1979) and Phillips-Perron (1988) tests for unit roots as well as a more recent generalized least squares equivalent form of the Dickey-Fuller test proposed by Elliott, Rothenberg and Stock (1996). When an augmentation is used we allow Schwarz's Bayesian information criteria to choose the number of augmentations. When a serial correlation consistent estimator of a long-run variance is needed we use the first four estimated autocovariances of the first differences of the relevant variable.

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[1] Sources: *World Media Handbook*, 1995.

The results of these unit-root tests are reported in the first panel of Table 1. For all three tests, EI fails to reject the null of a unit-root. A quick glance at the plot of this variable in reinforces that view: the variable is highly persistent. CI, however, does not yield consistent results. The augmented DF test -- which requires that the first differences of CI have a finite order autoregressive representation with *i.i.d.* error terms -- clearly rejects the null of a unit-root in favor of stationarity. This restrictive assumption has been criticized repeatedly and has led to newer tests such as that suggested by Phillips and Perron, whose test weakens those assumptions by allowing the first differences of CI to be arbitrarily covariance stationary. The Phillips-Perron test resulted in a statistic that is greatly reduced but still indicates significant evidence against the null[2]. The test by Elliott et al. weakens the assumptions of both of the previous tests by allowing for a heteroskedastic version of covariance stationarity. The Elliott et al. test failed to reject the null of a unit root. Similar contradictory evidence was also reported in Blood and Phillips (1995). The final variable, NEWS, is much more clear-cut. For all three tests the null of a unit root is rejected at the 5% level. This may be due to the presence of structural breaks in the behavior of the media and how they report upon the economy.

Table 1. about here.

The results on testing for a unit root follow a pattern similar to that in Blood and Phillips (1995). The results for EI and NEWS are clear while the results for CI are not. For the moment we work under the maintained hypothesis that CI is difference stationary. Support for this follows from Engle-Granger (1987) residual type tests for cointegration. We say that a vector Y_t of variables, more than 1 of which has a unit root, is cointegrated if there exists at least one vector β (with nonzero elements in at least two of those elements associated with nonstationary components) such that $\beta'Y_t$ is stationary. If it is the case that CI is stationary then there can exist no vector β with first element equal to 1 such that $\beta'Y_t$ is stationary (because y_{2t} and y_{3t} are stationary by assumption). We test this hypothesis in panel 2 of Table 1. In each column we regress one of the variables (referenced as the "dependent variable") on the remaining two variables. If it is true that CI is stationary then it follows that the residuals from the first column regression are nonstationary[3]. To test this we use the unit-root tests described above. In column 1 each unit root test rejects the null of a unit root in favor of stationarity. Since this implies that there does indeed exist a vector β with 1 as the first element such that $\beta'Y_t$ is stationary, we conclude that CI has a unit root.

Panel 2 of Table 1 provides more than just a justification for treating CI as having a unit root. It provides evidence that over long periods of time, EI and CI move together, even though they each have a unit root and are subject to "random wandering." In other words we have evidence supporting the fact that they, along with NEWS, are cointegrated. The first column of panel two can however be potentially misleading. It can be the case that the ordering of the variables (which one is the dependent variable) determines whether or not this test rejects or fails to reject for cointegration. To overcome this problem we consider all three possible residual-based tests of cointegration. In columns two and three we find nearly identical results as the first and hence we can more firmly state that the vector Y_t is cointegrated.

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[2] The Phillips-Perron test has the same critical values as that for the augmented DF test.

[3] We do not report the actual parameter values here since we are primarily interested in determining whether the variables are stationary or not and whether the vector Y_t is cointegrated.

Having determined some of the individual characteristic features of the data we move towards modeling the joint behavior of the variables. We say that Y_t has a VAR(k) representation if for a sequence of zero mean, uncorrelated error terms ε_t, the behavior of Y_t across time can be described using the regression model

(1) $Y_t = A + \Phi_1 Y_{t-1} + \ldots + \Phi_k Y_{t-k} + \varepsilon_t, \quad t = 1,\ldots,T$

which implies that the present value of the variable Y_t is determined by past values of that variable $Y_{t-1},\ldots,Y_{t-k}$, each of which is weighted by one of the (3x3) parameter matrices $\Phi_1,\ldots, \Phi_k$ and an error term ε_t that represents other relevant information that determines Y_t but which we cannot observe. To make this model operational we first must select the unknown lag length k. Following the discussion in Lutkepöhl (1991) we used the system of equations versions of the Akaike (AIC), Hannan-Quinn (HQ), and Schwarz (BIC) information criteria to select the lag-length. The former two criteria select k = 4 lags whereas the latter selects k = 1. Since the Hannan-Quinn criteria is consistent and coincides with the choice using AIC we elected to use the larger model with k = 4 lags to avoid underparameterizing the model.

With this framework causality test was implemented.[4] In a VAR we say that -- for example -- y_{2t} does not cause y_{1t} if the elements of the first row of the parameter matrices $\Phi_1,\ldots,\Phi_4$ associated with the 4 lagged values of y_{2t} are all equal to zero; y_{2t} causes y_{1t} if at least one of these 4 parameters is nonzero. Testing for causality can therefore be mapped into a test for exclusion of those four parameters. If the variables in the VAR are covariance stationary, an asymptotically chi-square test of the null that each of those 4 parameters can be excluded from the model (are each zero) can be constructed using the standard Wald test for linear restrictions in a linear regression model (Hamilton, 1994).

Here however we do not have stationarity in each of our variables. It is therefore not immediately clear that the standard test is applicable. To address this problem, Toda and Phillips (1993) derived conditions under which the standard test is still applicable. Toda and Phillips considered the standard test in the context of arbitrary finite dimensioned VAR models and concluded that so long as the scalar variable that has putative causal content is contained in at least one of the cointegrating relationships the standard test remains valid. In other words, we need to conduct tests of exclusion from the cointegrating relationship(s).

Panels 3 and 4 of Table 1 provide the information needed to conduct a test of exclusion. The first piece of information is simply how many linearly independent cointegrating relationships exist. Rearranging terms and letting Δ denote the first difference operator we obtain the representation:

(2) $\Delta Y_t = A + \Pi Y_{t-1} + \Gamma_1 \Delta Y_{t-1} + \ldots + \Gamma_{k-1} \Delta Y_{t-k+1} + \varepsilon_t, \quad t = 1,\ldots,T$

where $\Gamma_i = -(\Phi_{i+1} + \ldots + \Phi_4)$ $i = 1,\ldots,4$ and $\Pi = -I + \Phi_1 + \ldots + \Phi_4$. Among others, Johanssen (1991) has shown that the number of linearly independent cointegrating relationships is equal to the rank of the matrix Π. If the rank of Π is 0 then there is no cointegration (which would be a surprising result given the results of panel 2). Since the rank of a matrix is equal to the number of non-zero eigenvalues, it is natural to construct tests of the rank of Π using the eigenvalues of Π. With the Trace and λ-max tests, we rejected the null hypotheses of 0 and 1 cointegrating relationship but failed to reject the null of 2 cointegrating relationships (see panel 3).

That the number of cointegrating relationships is two is important because it affects how we conduct the test of exclusion. We must show that each of the three variables is contained in at least one of the two linearly independent cointegrating vectors. Johanssen (1991) provides a

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[4] The term causality is sometimes controversial. Throughout we use the term interchangeably with the concept of

means of conducting just such a test. If two cointegrating relationships exist, then model (2) becomes the following representation:

$$(3) \qquad \Delta Y_t = A + \alpha\beta' Y_{t-1} + \Gamma_1 \Delta Y_{t-1} + \ldots + \Gamma_{k-1} \Delta Y_{t-k+1} + \varepsilon_t, \quad t = 1,\ldots,T$$

where α is a (3x2) matrix of "loading factors" and β is a (3x2) matrix consisting of two linearly independent cointegrating vectors. With this representation the test is equivalent to testing whether the relevant row of β is a (2x1) vector of zeroes. The results of the tests rejected the null of exclusion in each case. We therefore concluded that each of the three variables is contained in at least one of the cointegrating relationships, which enables us to use the Wald test to assess causality even though two of the variables have a unit root.

The final panel of Table 1 includes a test for weak exogeneity. This is a test for what we can loosely refer to as long-run causality. In the context of our model (3), this concept can be mapped into determining whether or not the relevant row of α is a (1×2) vector of zeroes. Here we find that the cointegrating relationships seem to have an effect on both CI and NEWS but not the EI. In essence, this implies a "long-run" causal ordering among the variables. EI affects both CI and NEWS on average in the long run but not vice versa. Over long periods of time, the EI is weakly exogenous to this system of variables. This does not imply that CI and NEWS can have no impact over the economy but simply that the effects are transitory.

FINDINGS

After the unit root and cointegration examination, the three time-series are now eligible for VAR tests that inspect their causal relationship. Presented in Table 2 are the overall findings using OLS method and the standard Wald test for the exclusion of individual independent

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Granger-causality (Granger, 1969).

variables. When EI is the dependent variable, only CI at lag 1 was found a significant predictor. The results from the Wald test indicate a similar pattern – other than EI itself, only CI survives the test at .05 significance level. Moving down to the second panel of Table 2, we can immediately find that the media malady hypothesis is not supported since the t-tests at all 4 lags and Wald tests indicate insignificant results. The economic situation (EI), however, was found influential to people's perception (CI), particularly at lag 1. The third panel of the table shows the prediction model for recession coverage. It appears that both EI and CI are good predictors of recession coverage, although their impacts occur at different lags (lag 4 and lag 1, respectively). Also, Wald test results showed that EI significantly contributes to the equation (3%) and CI's contribution is marginal (7%).

Table 2 about here.

In response to literature's call for a special attention to the situational factor in forming research models (see e.g., Zucker 1978 and Wu et al. 1997), we made efforts to gauge the potential impact of different situations (between contraction and expansion periods of the economy) upon the prediction models. Two distinct ways of separating the time series were adopted. First, we identified two peaks of the economic performance curves in Japan and accordingly, located the two contraction periods (1990:6-1992:11 and 1996:11-1999:1) and the expansion periods (the rest of the time frame). Another way we used is identifying the periods whose EI is below 100, which resulted in the following periods -- 1991:3-1994:10, 1995:5-1995:10 and 1997:10-1999:12 – being treated as downturn duration and the rest as recovery counterparts. Therefore, a dummy variable that represents the recession periods was created and entered into the ensuing two models (see Tables 3 & 4).

Tables 3 & 4 about here.

As Wu et al. (1997) indicated in their U.S. study that news coverage may exert dramatically different kinds or magnitude of impact on the public across the periods, this study decides to capture this possible phenomenon in the Japanese case by introducing the interactive variable (news x recession dummy) into the models. In so doing, the researchers hoped to detect and identify any special, "extra" media effect during a recession. Moreover, additional Wald test that examines the joint impact of news AND news during recession (news x recession dummy) was conducted and presented at the far right of the tables.

Presented in Table 3 (that used the change of curve's direction method to identify recession periods) indicate that first, after recession dummy variable added into the model, the valid predictor in the preceding model, CI, was dropped out from the model. The recession dummy variable turns out to be the only significant predictor, indicating that the Japanese economy "walked" its own course without too much interference from the news or the confidence level of the Japanese consumers. Therefore, the hypotheses of media malady or consumer's confidence are not supported.

The prediction models for both CI and NEWS, however, do not appear to change with the addition of the recession dummy variable and its interaction term with recession news. EI is still the dominant factor affecting the Japanese's confidence level about their economy, which is reflected by the parameter estimate at lag 1 and the result of the non-causality test. When we look at the third panel of Table 3, the results also look similar to what we reported from Table 2 – people's confidence level at lag 1 seems to predict well and EI at lag 4 is marginally significant. The results of Wald test also echo what is found in Table 2. EI's causal contribution to the model is statistically significant (4.8%) while CI's test result is marginal (7.8%), indicating that after controlling for recession and its interaction with news factors, the news media in Japan reflected the state of the economy and the public's sentiment, even though the time lag of the two predictors' impact varies.

Table 4 presents the VAR results generated from the testing models that used 100 of EI as the benchmark to distinguish two different economic situations. The months that have their EI above 100 were considered expansion period while the rest were categorized as contraction period. The results overall resemble what is being observed from Table 3. EI was not found profoundly predictable with the independent variables of CI, NEWS, and the recession dummy variable. The public's sentiments toward the economy, once again, immediately followed the situation of the economic situation (OLS estimate significant at lag 1). Recession news also showed predictable by both EI and CI. All of these led us to conclude that the economic situation that played a decisive role found in the U.S. prediction models (Wu et al. 1995) fail to contribute similarly to the Japanese counterparts. In addition, even though the three examined time-series cointegrated along during the time frame, recession news's influence on the public perception or the economy was not found in Japan's case.

DISCUSSION

This study discovered that all the three examined variables – economic condition, recession coverage, and consumer confidence – were cointegrated with one another during the time period. The economic condition that was found to affect how the three variables interacted in the last U.S. recession did not generate a similar effect on the Japanese counterpart. The two major newspapers' coverage of recession reflected and followed both the economy and the public's sentiment at different lags. Contrary to the U.S. counterpart, the Japanese's confidence level was influenced by the economic indicator but not by the recession coverage regardless of the economic situation. This phenomenon of lack of media impact is intriguing.

One of the explanations that may contribute to the difference between the prediction models of the United States and Japan is the varied nature of economic recessions these two countries had. The economic slump that occurred in the United States during 1990-1991 can be seen as a classic recession – compared to Japan's case, it did not last long and was immediately followed by a strong expansion. The Japanese economic scenario of the last decade, however, was described more than just one or two recessions. Many portrayed it as a long-term, pernicious deflation (Strom, 2001b) and other – including Japan's Finance Minister Kiichi Miyazawa – called it a "catastrophic situation" for Japan, where a drastic, across-the-board overhaul of the country's economic structure has been recommended (Strom, 2001a). The long-overdue Japanese economic restructuring, according to *Newsweek*'s Samuelson (2000), has encountered a pervasive difficulty since the needed changes would have to eradicate the dominant, traditional values such as job security and social stability and abandon its government-led, export-oriented economy.

The different results generated from this study and other literature investigating economic communication during recessions may also stem from the deep and widespread pessimism among the Japanese and the ceiling effect or inertia phenomenon (Saltiel and Woelfel 1975) that might have been engendered by it. As early as 1995, the *New York Times* reported that many Japanese felt that nothing can be done at all to curb the continued slump (Passell, 1995). Even the strongest economic policy ever made by the government – zero interest rate of the Central Bank of Japan – have not been able to transferring savings to spending and investment. Several market rebounds during the last decade, including Nikkei's dramatic escalation and 7.9% GDP growth in the first quarter of 1999, have not successfully boosted the Japanese's confidence in business expectation (Ramo, 1999), which probably indicates that people were deeply entrenched in negative spirits and therefore, the impact of media's recession coverage on the audiences – above and beyond the economic reality – could be very limited after extensive exposure to all the years of bad news.

It is also interesting to find that news coverage – even though in general did a good job monitoring the economy – followed the public opinion more closely than reflected the economic situation. Perhaps, news functions not only as a mirror to reflect the reality but also a medium to unveil the public's sentiment and involve the readers in an economic event like recession. On the other hand, Japanese readers were able to form their opinion based more on the economic reality than on news coverage, which may be partly due to the lengthy recession and also partly their keen observation or/and personal experience of the economy.

Finally, this study does not necessarily generate findings that are in conflict with that of the past studies on similar subject. Instead, we may have found another situational factor that future researchers need to consider when looking at the economic communication. When the entire event's duration is long, such as this case, then the media impact may be abated and the entire communication process may be dramatically altered. In other words, researchers not only need to pay attention to the internal shift of the issue (such as downturn and recovery periods of a recession) but also the external traits that may include overall length of the event and cultural factors, which was only tackled to some extent in this paper.

This project has some limitations that need to be pointed out. For one thing, our content analysis of the two Japanese newspapers is not a perfect estimate of the media coverage's valence and salience of the issue. Perhaps, another measure of recovery in the news and a more reliable way of coding should be adopted. People's confidence level, a complex variable that includes many components, may be a factor that led to the insignificant results. Unfortunately, the authors could not find another public opinion index to replace. Lastly, the different natures of the three examined indexes should be kept in mind when interpreting the results, which may merit further investigation on the subject.

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Table 1

Tests for Unit Roots and Cointegration

Unit Root Tests

Test \ DV	EI	CI	NEWS
Augmented DF	-0.460	-12.678*	-27.297*
Phillips-Perron	-1.546	-2.424*	-2.947*
Elliott et al.	-1.200	-1.710	-2.230*

Residual-Based Tests for Cointegration

Test\Dependent Variable	EI	CI	NEWS
Augmented DF	-4.230*	-4.457*	-4.104*
Phillips-Perron	-4.234*	-4.434*	-4.226*
Elliott et al.	-3.056*	-3.606*	-4.105*

System-Based Tests for Cointegration

Hypothesis\Test	Trace	λ-Max	Eigenvalue
H_0: Rank(Π) = 0	54.46*	29.28*	0.1887
H_0: Rank(Π) = 1	25.19*	19.91*	0.1327
H_0: Rank(Π) = 2	5.27	5.27	0.0369

Test for Exclusion

Test\Covariate	EI	CI	NEWS
Johanssen	12.70*	14.23*	22.81*

Test for Weak Exogeneity

Test\Covariate	EI	CI	NEWS
Johanssen	3.22	18.47*	19.72*

Notes: Elliott et al. (1996) consider several statistics. We use what they refer to as the DFGLS statistic. For each unit root test (and residual-based test for cointegration) we use the lag length selected by Akaike's information criteria. The tests of exclusion and weak-exogeneity are conducted assuming that there are two cointegrating relationships and where a constant is allowed in those relationships. There are 144 monthly observations spanning 1988:1-1999:12. A '*' denotes significant at the 5% level of significance.

Table 2

Model 1: Parameter Estimates and Tests of Non-Causality

DV	IV					
EI		Lag 1	Lag 2	Lag 3	Lag 4	Test of Non-Causality
	EI	0.825 (10.544)	0.147 (1.463)	0.375 (3.753)	-0.386 (-5.047)	316.444 (0.000)
adj. R^2 = 0.979 DW = 2.090	CI	0.028 (2.049)	-0.130 (-0.725)	0.025 (1.433)	-0.019 (-1.338)	2.489 (0.045)
	NEWS	-0.000 (-0.053)	0.002 (0.548)	0.008 (1.745)	-0.004 (-1.157)	2.129 (0.080)
	Constant	1.838 (0.805)				
CI		Lag 1	Lag 2	Lag 3	Lag 4	
	EI	1.662 (3.436)	-0.663 (-1.066)	-0.604 (-0.978)	0.265 (0.559)	6.203 (0.000)
adj. R^2 = 0.892 DW = 1.975	CI	0.836 (9.670)	-0.069 (-0.624)	0.088 (0.795)	-0.079 (-0.900)	47.664 (0.000)
	NEWS	0.003 (0.159)	0.028 (0.977)	-0.022 (-0.758)	0.036 (1.498)	1.675 (0.159)
	Constant	-49.803 (-3.531)				
NEWS		Lag 1	Lag 2	Lag 3	Lag 4	
	EI	-0.079 (-0.045)	1.237 (0.548)	1.185 (0.529)	-3.724 (-2.172)	2.728 (0.031)
adj. R^2 = 0.834 DW = 1.970	CI	-0.874 (-2.794)	0.599 (1.491)	-0.234 (-0.579)	0.115 (0.359)	2.198 (0.072)
	NEWS	0.708 (8.139)	0.103 (0.967)	-0.081 (-0.763)	-0.106 (-1.217)	38.167 (0.000)
	Constant	183.186 (3.588)				

Notes: All parameters are estimated using OLS. The parameters are reported under the headings 'Lag 1 - Lag 4' with their respective t-statistics in parentheses. The test of non-causality is the standard Wald test for exclusion of the relevant variable(s) from that particular equation. It and its approximate p-value (using the F-distribution) are reported under the heading "Test of Non-Causality." There are 144 monthly observations (1988:1-1999:12).

Table 3

Model 2: Parameter Estimates and Tests of Non-Causality

DV	IV	Lag 1	Lag 2	Lag 3	Lag 4	Test of Non-Causality	
EI							
	EI	0.733	0.177	0.374	-0.308	322.526	
		(9.099)	(1.754)	(3.756)	(-3.820)	(0.000)	
adj. R^2 = 0.980	CI	0.022	-0.017	0.017	-0.022	1.225	
DW = 2.119		(1.625)	(-0.999)	(0.947)	(-1.520)	(0.303)	
	NEWS	-0.000	-0.001	0.006	-0.003	0.425	
		(-0.114)	(-0.362)	(1.266)	(-0.901)	(0.789)	0.650
	NEWS:	-0.002	0.002	0.004	-0.003	0.469	(0.733)
	In a Recession	(-0.515)	(0.455)	(0.898)	(-0.855)	(0.758)	
	Recession Dummy	-1.175				17.249	
		(-4.153)				(0.000)	
	Constant	2.679					
		(1.168)					
CI		Lag 1	Lag 2	Lag 3	Lag 4		
	EI	1.481	-0.528	-0.690	0.456	5.894	
		(2.812)	(-0.800)	(-1.058)	(0.865)	(0.000)	
adj. R^2 = 0.881	CI	0.819	-0.076	0.065	-0.078	35.967	
DW = 2.036		(9.002)	(-0.654)	(0.558)	(-0.825)	(0.000)	
	NEWS	0.007	0.010	-0.019	0.052	1.463	
		(0.262)	(0.307)	(-0.595)	(1.905)	(0.217)	1.029
	NEWS:	-0.011	0.028	0.014	-0.049	1.085	(0.417)
	In a Recession	(-0.424)	(0.822)	(0.403)	(-1.821)	(0.366)	
	Recession Dummy	-1.788				0.934	
		(-0.966)				(0.335)	
	Constant	-51.411					
		(-3.43)					
NEWS		Lag 1	Lag 2	Lag 3	Lag 4		
	EI	0.111	0.545	1.373	-3.604	2.466	
		(0.060)	(0.233)	(0.596)	(-1.935)	(0.048)	
adj. R^2 = 0.828,	CI	-0.906	0.601	-0.227	0.200	2.153	
DW = 1.990		(-2.822)	(1.461)	(-0.548)	(0.601)	(0.078)	
	NEWS	0.596	0.159	-0.093	-0.126	19.342	
		(5.988)	(1.368)	(-0.812)	(-1.311)	(0.000)	18.542
	NEWS:	0.287	-0.255	0.099	0.081	3.512	(0.000)
	In a Recession	(2.901)	(-2.111)	(0.811)	(0.850)	(0.016)	
	Recession Dummy	-7.440				1.299	
		(-1.139)				(0.256)	
	Constant	200.482					
		(3.791)					

Notes: All parameters are estimated using OLS. The recession dummy-variable takes the value 1 during the periods 1990:6-1992:11 and 1996:11-1999:1. The parameters are reported under the headings 'Lag 1 - Lag 4' with their respective t-statistics in parentheses. The test of non-causality is the standard Wald test for exclusion of the relevant variable(s) from that particular equation. It and its approximate p-value (using the F-distribution) are reported under the heading "Test of Non-Causality." There are 144 monthly observations (1988:1-1999:12).

Table 4

Model 3: Parameter Estimates and Tests of Non-Causality

DV	IV	Lag 1	Lag 2	Lag 3	Lag 4	Test of Non-Causality	
EI							
	EI	0.791 (9.234)	0.148 (1.396)	0.361 (3.403)	-0.383 (-4.678)	147.976 (0.000)	
adj. $R^2 = 0.977$, DW = 2.021	CI	0.025 (1.659)	-0.016 (-0.878)	0.028 (1.471)	-0.016 (-1.090)	1.739 (0.145)	
	NEWS	-0.012 (-0.411)	-0.021 (-0.592)	0.038 (1.042)	-0.019 (-0.669)	0.411 (0.800)	1.042 (0.409)
	NEWS x Recession Dummy	0.011 (0.374)	0.023 (0.650)	-0.029 (-0.817)	0.015 (0.551)	0.397 (0.809)	
	Recession Dummy	-0.855 (1.873)				3.764 (0.054)	
	Constant	6.821 (1.873)					
CI		Lag 1	Lag 2	Lag 3	Lag 4		
	EI	1.752 (3.319)	-0.662 (-1.009)	-0.447 (-0.683)	0.181 (0.359)	4.810 (0.001)	
adj. $R^2 = 0.881$, DW = 1.971	CI	0.836 (8.908)	-0.053 (-0.450)	0.060 (0.509)	-0.061 (-0.651)	40.691 (0.000)	
	NEWS	0.147 (0.794)	0.054 (0.237)	-0.399 (-1.770)	0.165 (0.921)	1.095 (0.361)	1.349 (0.225)
	NEWS x Recession Dummy	-0.143 (-0.788)	-0.021 (-0.094)	0.379 (1.686)	-0.132 (-0.742)	1.133 (0.344)	
	Recession Dummy	2.595 (0.955)				0.912 (0.341)	
	Constant	-67.825 (-3.022)					
NEWS		Lag 1	Lag 2	Lag 3	Lag 4		
	EI	-0.418 (-0.216)	1.373 (0.572)	1.026 (0.429)	-3.960 (-2.144)	2.875 (0.025)	
adj. $R^2 = 0.815$, DW = 1.986	CI	-0.965 (-2.812)	0.552 (1.276)	-0.193 (-0.444)	0.182 (0.527)	2.256 (0.066)	
	NEWS	0.328 (0.485)	-0.360 (-0.433)	0.055 (0.067)	-0.247 (-0.376)	0.178 (0.949)	16.224 (0.000)
	NEWS x Recession Dummy	0.356 (0.533)	0.457 (0.533)	-0.131 (-0.160)	0.149 (0.228)	0.626 (0.644)	
	Recession Dummy	-13.303 (-1.339)				1.793 (0.183)	
	Constant	254.364 (3.101)					

Notes: All parameters are estimated using OLS. The recession dummy-variable takes the value 1 during the periods 1991:3-1994:10, 1995:5-19995:10 and 1997:10-1999:12. The parameters are reported under the headings 'Lag 1 - Lag 4' with their respective t-statistics in parentheses. The test of non-causality is the standard Wald test for exclusion of the relevant variable(s) from that particular equation. It and its approximate p-value (using the F-distribution) are reported under the heading 'Test of Non-Causality'. There are 144 monthly observations (1988:1-1999:12).

Counteracting the Biasing Effect of Unrepresentative Exemplification on News Readers' Issue Perception

by

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Counteracting the Biasing Effect of Unrepresentative Exemplification on News Readers' Issue Perception

Abstract

Use of unrepresentative exemplification has been shown to mislead news recipients' perceptions of majority/minority position featured in the base-rate information. This study examined the effects of vivid presentation and causal information in counteracting the biasing influence of unrepresentative exemplification. Results showed that 1).the vivid presentation of base-rate information increased recall of such information., 2) the presence of causal information increased the utilization of base-rate information, 3) the observed effects sustained both in the issue of high relevance and low relevance to news readers.

News exemplification
Base-rate fallacy
Cognitive processing
Issue perception

Counteracting the Biasing Effect of Unrepresentative Exemplification on News Readers' Issue Perception

Introduction

As all information is not created equal, people respond to different types of information with different degrees of attention and process them with different strategies, which may in turn lead to different decision making. The influence of message attributes on peoples' decision/judgment making is demonstrated in such studies as framing effect (e.g., Davis, 1995). For instance, Iyengar (1991), in an extension of his earlier work (see Iyengar, 1990; Iyengar & Kinder, 1987) discussed the effects of framing on the attribution of responsibility. In several of his experiments he showed that subjects who saw, for example, an episodic framing (i.e., case-specific information or exemplar) of reports of the plight of the homeless, instead of a thematic framing (i.e., base-rate information) about them, blamed their plight on individual rather than governmental failings. This finding indicates that individual issue perception and attribution of responsibility are in fact affected by the information type in which an issue is presented/packaged.

Iyengar's studies (1990, 1991) point to the possibility that news media's focusing on a certain type of information presentation may influence public perception of the issue responsibility. However, he did not address the question of how the public will respond when both types of information are presented in the same news story. Are people therefore able to construct a more balanced perspective? Or is a certain type of information still dominant over the other in influencing people's issue perception? Recently, the effects of the simultaneously presented case-specific and base-rate information on individual issue perception were examined in form of news magazine stories (Gibson & Zillmann, 1994; Gunther & Christen, 1997, 1999; Zillmann, Perkins, & Sundar, 1992; Zillmann, Gibson, Sundar, & Perkins, 1996) and radio broadcasts (Brosius & Bathelt, 1994). These studies experimentally manipulated the distribution of exemplars (i.e., case-specific information) to be either consistent or inconsistent with base-rate information. The results showed a dominant impact of exemplars on individual issue perception: While there was no main effect of base-rate information present in either condition, problems arose in the inconsistent condition where the distribution of majority vs. minority exemplars was misrepresented (Brosius & Bathelt, 1994). Such unrepresentative exemplification could mislead news recipients' understanding and change their individual opinions and attitudes about an issue (Brosius & Bathelt, 1994; Gunther & Christen, 1997, 1999), which in a long run may lead to an erroneous formation of public opinion and may have serious consequences in the democratic process.

In response to the problem, communication researchers suggested that journalists should be aware of the biasing effect of unrepresentative exemplification and should present an aggregation of exemplars reflecting the distribution of majority vs. minority in the base-rate information (Brosius & Bathelt, 1994; Gibson & Zillmann, 1994; Zillmann, Gibson, Sundar, & Perkins, 1996). In reality, however, the ratio of majority vs. minority is not always reflectable through the composition of respective exemplars. For example, a ratio of 60% vs. 40% is easily presentable with a composition of three (or six) majority exemplars and two (or four) minority exemplars. Nevertheless, a ratio of 99% vs. 1% is virtually unfeasible for a fair and accurate presentation of illustrating exemplars. To complicate this issue even more is the news value that news media put on deviance—atypical, out-of-norm incidents and behaviors that may represent the extreme minority (Shoemaker, Chang, & Brendlinger, 1987). Therefore, selection of exemplars tends to favor those that are dramatic, vivid and possibly shocking (Bogart, 1980; Haskins, 1981). All of these reasons point to the need for constructive strategies in counteracting the biasing effect of unrepresentative exemplification.

So, what can be done to guarantee a well and accurately informed society? Under what conditions will a news recipient give base-rate information enough weight to counter the dominant impact of case-specific information on his/her judgment, especially when a representative composition of exemplars is virtually impossible? Previous studies in the literature have established the danger of using an unrepresentative aggregation of exemplars, and have suggested that journalists should avoid such a practice (e.g., Gibson & Zillmann, 1994; Zillmann, Gibson, Sundar, & Perkins, 1996; Zillmann, Perkins, & Sundar, 1992). However, they failed to identify constructive solutions that can be used to counteract (not just avoid) such a fallacy. Based on theoretical frameworks and empirical evidence from the literature of base-rate fallacy research, information processing, social cognition and news learning, this study identifies two message attributes that are strong enough to induce news readers' proper cognitive strategies in their information processing. Specifically, with the induction of vivid presentation and causal information, news readers are expected to counteract the biasing effect of unrepresentative exemplification and to improve the accuracy of their issue perception.

Literature Review

Effects of Unrepresentative Exemplification

There are generally two types of information, especially for in-depth reporting, contained in a news story: 1) base-rate information indicates the status of issue under consideration. It provides information about the causes, importance, and consequences of the problem, as well as things or people involved in forms of statistics, polls or official statement by the government, and 2) exemplars (or case-specific information) are illustrating cases used to support the base-rate information from the unique perspective of individuals. They could be in form of interviews, sound bites, or the journalist's observations and interpretations of the incidents. Given a report on the incident of Clinton's sex scandal, for instance, the poll results on whether he should resign would be the base-rate information, and individual interviews of American people's takes on this issue, in illustrating the poll results, would be the exemplars.

Although base-rate information and specific exemplars are both used to explain and elaborate on an issue, their impacts on news recipients differ. Exemplars, with their episodic structures, have an advantage over base-rate information in terms of imagery vividness and information concreteness (Brosius, 1993; Brosius & Mundorf, 1990). Therefore, they are more easily comprehensible. Due to their attention-grabbing and image-evoking traits, exemplars also demonstrate a dominant effect in influencing people's perceptions, and are thus more persuasive than base-rate information (Brosius & Bathelt, 1994; Zillmann, Perkins, & Sundar, 1992). These advantages become problematic when two types of information are competing with each other under such a condition as unrepresentative exemplification. For example, in one news story of President Clinton's sex scandal, four exemplars for and two exemplars against his resignation are featured to illustrate a poll result — 66% of the respondents supporting Clinton's staying in the office. In this case, the makeup of exemplars contradicts the distribution of population, which may lead to news recipients' misperception of the majority vs. minority stances on this issue.

In a series of five experiments, Brosius and Bathelt (1994) examined the effect of unrepresentative exemplification in relation to the following areas: 1) precision of base-rate information (precise figure vs. rough description), 2) strength of vividness in exemplars (vivid vs. pallid, more vivid vs. less vivid), 3) different medium of presentation (radio vs. print), 4) relationship between the distribution of exemplars and judgments about the problems, 5) duration of the effect. They found that base-rate information, regardless of its types, has no impact on news recipients' perception or judgment about a problem. On the contrary, there is a strong linear relationship between distribution of exemplars and perceptions majority and minority opinions. The effects of exemplars are present regardless of the presentation medium, and sustain over time. It seems that news recipients "compute" the perceived opinions by the number of pro- and con-exemplars, instead of paying attention to the valid, clear-stated base-rate information. The dominant effect of exemplars on people's issue perception and impression formation was also observed in other similar studies (Zillmann, Gibson, Sundar, & Perkins, 1996; Zillmann, Perkins & Sundar, 1992; Gibson & Zillmann, 1994).

Vividness Effect and Availability Heuristic

To counteract the biasing effect of unrepresentative exemplification, one needs to first examine why exemplars have such an "irresistible" appeal to human perception and what cognitive strategy people adopt to process inconsistent base-rate information and exemplars. Vividness effect and availability heuristic are often cited to explain the dominant effect of exemplars (e.g., Brosius & Bathelt, 1994; Gibson & Zillmann, 1994; Zillmann, Gibson, Sundar, & Perkins, 1996; Zillmann, Perkins, & Sundar, 1992). According to the vividness effect, exemplars, being vivid, concrete, emotionally provoking, have an advantage of being processed. Such an advantage fosters encoding, storage, and finally retrieval biases (i.e., availability heuristic). Because of their easy availability/accessibility, exemplars exert a stronger influence on judgment and are capable of biasing it in predictable ways. Therefore, the combination of vividness effect and availability heuristic poses special risk on using selectively aggregated exemplars.

In order to minimize the misleading impact of unrepresentative exemplification, especially when a representative aggregation of exemplars is not feasible, one needs to increase the influence of base-rate information on news recipients' issue perception. To counteract the vividness advantage of exemplars, it is necessary to either manipulate the message attribute of base-rate information or to caution news recipients to use a proper cognitive strategy in processing such information. The latter, though theoretically valid and methodologically viable, is likely to compromise the integrity of everyday news processing. Therefore, it makes more sense to employ the former solution to draw news recipient attention to a favorable assessment of base-rate information. In other words, a presentation of base-rate information based on the vividness effect needs to be adopted to enhance the visibility and concreteness of such information.

Nevertheless, vividness effect, though has been widely cited and convincingly conceptualized, is not always present under the empirical examination. In fact, Taylor and Thompson (1982) concluded, "Everyone knows that vividly presented information is impactful and persuasive…There is only one problem with this self-evident proposition: the available evidence suggests it is not true" (p.155). Such a bold statement is as controversial as the vividness effect itself. Although several studies have failed to find a significant vividness effect (e.g., Brosius & Bathelt, 1994, Experiments 1 & 2; Gottlieb, Taylor, & Ruderman, 1977, Experment 2; Manis, Dovalina, Avis, & Cardoze, 1980, Experiment 3; Nisbett & Borgida, 1975, Study 1), others have no problem establishing such an effect or finding evidence related to the effect (Kisielius & Sternthal, 1984; David, 1996; D'Agostino & Small, 1980; Reyes, Thompson, & Bower, 1980). So, what constitute the discrepancy? Is the vividness effect and illusion or an effect hard to establish? It is argued that vividness effect can be evidenced with proper operationalization and experimental procedures, as those employed in this study.

According to Fiske and Taylor (1991), vividness comes from inherent features of a stimulus that are attention getting, regardless of the context. In other words, a vivid object or event possesses characteristics that are either "emotionally interesting, concrete and imagery-provoking, (or) proximate in a sensory, temporal or spatial way" (Nisbett & Ross, 1980, p. 45). In research, vividness is usually operationalized in the following three different ways—visual format, information concreteness, and instruction to imagine. Each operationalization is based on the assumption that imagery facilitates information processing. Vivid information is processed more fully at encoding, and thus it comes to mind more easily at the stage of retrieval (Nisbett & Ross, 1980; Tversky & Kahneman, 1973). Therefore, considerable support for the vividness effect is found in the literature when message effectiveness is judged in terms of stimulus recall (e.g., David, 1996; Kisielius & Sternthal, 1986; Madigan & Lawrence, 1980; Pavio, 1973). The effect of vividness becomes controversial in situations where attitude or persuasion is the criterion for judging message effectiveness. Despite employing similar vividness manipulations which are used in studies measuring recall, a substantial number of investigations fail to produce a significant attitudinal effect (e.g., Borgida, 1979; Collins, Taylor, Wood, & Thompson, 1988; Taylor & Thompson, 1982). The most direct effort to make sense of this discrepancy naturally points to the difference between recall and persuasion. Recall is likely to involve only cognitive operation, while persuasion requires both cognitive and affective processes (Kisielius & Sternthal, 1986; McGuire, 1989). This study testing the effects of base-rate information vs. exemplars involves the measurement of memory-based judgments. Its chance to find a significant vivid effect therefore should be increased due to the nature of judgments.

Another possible reason why some studies failed to establish vividness effect may be due to the improper operationalization of the vivid conditions. Taylor and Thompson (1982) contend that vivid information needs to be accompanied by pallid information in order to produce a salient contrast to elicit effects. However, most research designs presented vivid and pallid information separately to different experimental groups, which decreases the impact of vividness effect (e.g., Nisbett & Borgida, 1975, Study 1; Reyes, Thompson, & Bower, 1980). To maximize the influence of vividness, this study employs an infographic, this is a graphic presentation of statistics, to increase the vividness of the base-rate information. The stimulus for the vivid condition, therefore, comprises a verbal description of the base-rate information (pallid element) and a graphic presentation of the statistics (vivid element) to produce a salient contrast as proposed by Taylor and Thompson (1982). With the base-rate information being vividly presented in the form of infographics, its impact on individual's cognitive processing of such information should be increased. With increased availability of base-rate information in memory, news readers should be more likely to utilize the base-rate information and less likely to have an erroneous issue perception. Based on this argument, the following hypotheses are therefore postulated:

H_1: The vivid presentation will increase news readers' utilization of base-rate information in issue perception.

H_2: The vivid presentation of base-rate information will increase news readers' attention to such information.

H_3: The vivid presentation of base-rate information will increase news readers' recall of such information.

Base-rate Fallacy and Judgment of Relevance

The effects of simultaneously presented base-rate information and case-specific information (e.g., exemplars) on individual judgment/decision making have long been an interest of research in social psychology since 1970s (Tversky & Kahneman, 1974). People's tendency to neglect base-rate information in favor of case-specific information in their judgment making, when these two types of information are competing with each other for people's attention, is termed as the base-rate fallacy by Bar-Hillel (1980). She argues that the reason why people pay less attention to base-rate information is because the judgment of relevance. People order or rank information by its perceived degree of relevance to the problem they are judging. Less relevant items are discarded prior to any consideration of informative values (Bar-Hillel, 1980). Therefore, base-rate information is disregarded, in spite of its informative values, due to its perceived low degree of relevance. This argument was validated by forcing experiment subjects to choose which information (base-rate, case-specific, or both) was more relevant to their judgment, with the majority choosing case-specific information (Lyon & Slovic, 1976; Scholz, 1987). In addition, empirical evidence shows that people do use base-rate information when its relevance is clear (Ajzen, 1977; Bar-Hillel, 1980; Hewstone, Benn, & Wilson, 1988; Koehler, 1996; Tversky & Kahneman, 1980).

One way to enhance the relevance of base-rate information to judgment tasks is to introduce such factor as causality into the base-rate information. A number of studies demonstrates that people are more likely to use base-rate information if its causal relevance to the judgment task is made salient than if it is not (Ajzen, 1977; Bar-Hillel, 1990; Hewstone, Benn, & Wilson, 1988; Manis, Dovalina, Avis, & Cardoze, 1980; Tversky & Kahneman, 1980). Causal attribution plays a critical role in the process of decision making. It is people's instinct to causally explain the event in a situation of uncertainty. Causality provides a sense of the occurrence, enhances coherence of the reasoning, and facilitates the process of inference (Fiske & Taylor, 1991; Harvey, Turnquist, & Agostinelli, 1988). When a causal relationship can be established between the base rates and judgment task, people use base rates in preference to colorful case-specific information. For example, in a problem used by Ajzen (1977) to demonstrate the impact of causal relevance on the use of base rates, the number of hours the student spent studying during an average week presented as base-rate information was utilized in the estimate of the student's cumulative grade point average (GPA). People's quest for causal attribution is so strong that they sometimes even fall for the seemingly causal (but actually non-causal) relationship in a judgment (Bar-Hillel, 1990).

Causal Schema and Base-rate Information

Why is causality effective in counteracting the base-rate fallacy? Why do people perceive causal information as more relevant to decision/judgment making than other types of information? Is such influence transferable to the task of issue perception in the context of unrepresentative news exemplification? To address these questions, a discussion drawn from the theoretical accounts on the role of causal schema from the human information processing theory, and recent findings from the news learning studies will be presented in the following paragraphs.

Tversky and Kahneman (1980) confirmed that causal data have greater impact than other data of equal informativeness, and causal base-rate information is given more weight than case-specific information in human judgment making. They argued that an understanding of causality is central to our ability to deal successfully with the complex world in which we live. Such comprehension of causal relationship is so pivotal that people are strongly focused on seeking causal explanations and tend to impose causal interpretations on events that occur close together in space and time, regardless of their underlying relationship (e.g., Michotte, 1963). In other words, people tend to make sense of events or actions by organizing available information or data according to the existing cause-effect structure. Information or datum that is able to fit into the structure (i.e., to activate the causal schema) will be given processing priority and receiving more weight later in the judgment phase. That is why causal information or information that implies a cause-effect relation is considered particularly relevant (e.g., Bar-Hillel, 1980) or informative (e.g., Ginossar and Trope, 1980) to a judgment task.

Judging from the nature of news learning, which plays an essential role in this study, schematic processing is considered as the most appropriate strategy to process information from news (e.g., Graber, 1988). Schema is a model or prototype by which people internalize, structure, and make sense of an event (Baddeley, 1990; Bartlett, 1932; Graber, 1988; Wicks, 1992). According to schema theory, human minds employ a system that resembles a file cabinet. The function of the "file cabinet" is to facilitate organizing, storing and retrieving information. Data of different categories are filed away in different "bins" for later retrievals (Graber, 1988; Sternberg & Smith, 1988). Not all bins are equally active. In fact, the bin that contains causal schemas is considered more active than others (Tversky & Kahneman, 1980) since people are constantly seeking answers for a cause-effect relation (e.g., Jones, Kanouse, Kelley, Nisbett, Valins, & Weiner, 1972; Ross, 1977). A processing model that activates a causal schema and confirms one's expected cause-effect relation would be harder to be revised even when new inconsistent evidence is present. In this sense, it is logical to assume that the presence of causal schema stabilizes one's cognitive activities once a causal attribution is established. In other words, the establishment of causality facilitates the organization of information. In one's mental map, causal information can function as a critical landmark, which makes retracing (recall) of other relevant information easier. Base-rate information that contains or implies causality will therefore be active in attracting people's processing and will stabilize the processing model after a cause-effect relation being established (i.e., less likely to be interfered by the contradicting exemplification). In addition, causal base rate will also enhance the organization of relevant information, which will in turn increase the accuracy of people's memory-based issue perception.

In addition to the theoretical frameworks proposed, empirical evidence from the literature of news learning also lends some support to these theoretical interpretations. Woodal (1986) contends that one of the broad schemas used by journalists to formulate and present stories to news users is the who, what, why, where, and when (5W) structure. This structure currently routinizes news information more than any other approach. Although the common presumption is that each of these 5W criteria is equally important for a news user to comprehend the story, it appears that users weigh these criteria differently. A study conducted by Findal and Hoijer (1981) has shown that the *why* or *causal elements* of a news story have the most influence on user comprehension. It is argued that causal elements (why) allow other elements (the other 4Ws) to be cognitively integrated into an overall story theme (Findal & Hoijer, 1981; Woodal, 1986). On the other hand, other story elements alone could not result in much user integration and comprehension of news information. These findings are important to this study because they capture the potential of causal elements in highlighting story themes or scripts and improving people's understanding of news stories. In this sense, causal elements embedded in base-rate information should be able to attract news reader attention in encoding the information, and hence be given more weight in influencing judgments about the issue covered in the news story. The existing theories and research therefore suggest the following hypothesis:

H_1: The presence of causal information will increase news readers' utilization of base-rate information in issue perception.

As discussed earlier, Bar-Hillel (1980) contends that the reason why causal base rates have more impact on people's judgments than non-causal ones is because causality exerts a sense of relevance. That is, causal base rates are considered as more relevant to the judgment task than their non-causal counterparts. In this sense, participants who are exposed to the causal base-rate condition should rely more on the statistical information to reach their judgments. In addition, causality is deemed to increase the coherence of reading and to improve text comprehension (e.g., Golding, Millis, Hauselt, & Sego, 1995). With a sense of better understanding of the news story, participants who are exposed to the causal base-rate condition should be more confident in the accuracy of their judgments. Based on these arguments, the following hypotheses are postulated:

H_5: The presence of causal information will increase news readers' assessed relevance of the base-rate information to the judgment task.

H_6: The presence of causal information will increase news readers' perceived confidence in the accuracy of their judgments.

METHOD

Experimental Design

This study employed a 2 x 2 x 2 mixed factorial design. Two key factors and one secondary factor were explored in this study, with vivid presentation (present vs. absent) and causal information (present vs. absent) as between-subject manipulation, and issue relevance (high vs. low) as a within-subject variable. Vivid presentation refers to the conditions in which base-rate information is visually presented. It was manipulated by presenting text with an infographic displaying the statistics or text only. Causal information refers to information that accounts for the outcome of the base-rate information, i.e., a causal explanation ("why" information) about the base-rate information is provided. It is operationalized by including/excluding a causal explanation about the base-rate information in the news story. For example, in the causal base-rate condition of the "campus security at Princeton" story, a paragraph of explanation was provided (i.e., recent increases in campus crime) to account for the surprising turnout of an opinion poll (i.e., base-rate information). Based on these two independent variables, four versions of news stories were produced: (1) causal base rate with text and infographic, (2) causal base rate with text only, (3) non-causal base rate with text and infographic, and (4) non-causal base rate with text only.

Issue relevance, which is considered as a secondary factor under examination, was defined as the degree an issue is considered pertinent to one's life or agenda. This variable was included to reduce the possibility of issue selection bias. It was operationalized by presenting a high-relevance news story and a low-relevance one to each participant. In other words, each participant served as his/her own control. Presentation order of the two stories was counterbalanced to eliminate the possible order effect. A total of eight different experimental conditions was therefore established. Figure 1 summarizes the independent variables and experimental manipulation.

Figure 1 about here

Dependent variables in this study include utilization of the base-rate information, accuracy of recall, and assessed relevance, perceived attention, and confidence levels related to the base-rate information. Utilization of the base-rate information was defined as the way participants generate their issue perceptions, whether they were based on the base-rate information or exemplars. It was measured with a multiple-choice question asking participant impression of the majority's position on the issue covered in the news story. For the "campus security" story, for instance, the question was posed as follows: "Based on your impression of the news story, what does the majority of the student body at Princeton want?" Participants' ability to generate the correct impression, which should be based on the base-rate information, is taken as an indication of their utilization of the base-rate information. In this sense, participants who selected the correct answer, "a closed-door policy at all dormitories," were inferred as utilizing the base-rate information to form such a perception. Accuracy of recall was defined as one's ability to retrieve specific base-rate information presented in the text or in the infographic. It was tapped by asking participants to provide a specific statistical figure contained in the base-rate information. Participants were asked to answer the following question to indicate their ability in recalling the base-rate information featured in the "campus security" story: "According to the poll result at Princeton, how many students oppose the closed-door policy? Please answer in terms of a percentage figure." For these two variables, "1" was assigned to correct responses while "0" was assigned to incorrect ones.

As for the rest of the dependent variables, assessed relevance was defined as the degree of pertinence one attributes to a certain type of information when making a judgment. Experiment participants were asked to rate on 7-point unipolar scales their assessed relevance for both base-rate information and exemplars to their issue perceptions (e.g., "A poll result is quoted in the news story. On a scale of 1 to 7, please indicate how relevant this poll result is to the answer you have chosen in Question 1."). Attention level referred to the degree of mental intensity one devotes to a certain type of information when processing it. Similar to the treatment of the previous variable, participants were asked to assess the degree of attention they had devoted to base-rate information and exemplars using 7-point unipolar scales (e.g., "On a scale of 1 to 7, please indicate how attentive you were to the poll result when you were reading the news story."). As argued in the conceptualization and proposed in the hypotheses, the treatments of vivid presentation and causal information are likely to increase people's perceived relevance and attention level associated with the base-rate information. Therefore, participants in the vivid-presentation and causal-information conditions are expected to generate higher mean ratings on these two variables than their counterparts in other groups. Confidence level was defined as the degree to which one is sure of the accuracy of his/her responses. It was measured by asking participants to assess their confidence about the answers/responses they had given on a 7-point unipolar scale (e.g., "On a scale of 1 to 7, please indicate how confident you are about the percentage you have given in Question 7.").

Issue Selection

To operationalize the variable issue relevance, two issues varying in the degree of relevance to the experiment participants were needed to comprise the experiment stimulus. These two issues also had to be controversial and to comprise opinions from two opposite parties (i.e., for vs. against and majority vs. minority) to meet the need of experimental design. Under consideration of all these criteria, news reports on the issues of campus security and local economy were retrieved from the database of Lexis/Nexis' news libraries. The campus security issue was considered as more relevant to the experiment participants due to its subject matter on college safety, as well as featuring student voices on the issue. Conversely, the local economy issue was considered as less relevant to college students' lives. A previous study (Chang, 1998) conducted on a similar subject group to the one used in this experiment showed that this group, on average, had low interest in issues concerning the local community, business and economy. Based on the above-mentioned arguments, the "retail giant rattles local shops" story was selected as a stimulus for the low-relevance condition, while the "closed-door policy at Princeton" story was picked for the high-relevance condition.

To check the manipulation of issue relevance, experiment participants were asked to rate how much each news story matters to them on a 7-point unipolar scale.

Stimulus Material

Two news stories, "Closed-door policy at Princeton" and "Retail giant rattles local shops," from the *New York Times* and the *Washington Post* were selected to be the main constituents of the experimental stimuli. To meet the needs of experimental design and to minimize the possibility to prior exposure, some poll figures were altered and some individual interviews replaced. Since the focus of this study is to examine the effects of vivid presentation and causal information in counteracting the biasing influence of unrepresentative exemplification, both stories were re-composed to simulate such a condition. Specifically, the composition of majority vs. minority exemplars is exactly opposite to the distribution of the base-rate information. For example, in the "Closed-door policy" story, the base-rate information stated that 68% of the student body supported and 32% opposed the closed-door policy. However, the exemplification was composed of two for-interviews and four against-interviews.

Both experimental news stories were made comparable in terms of length, layout, and the headline and sub-heading treatment.

Pilot Study

A pilot study was conducted on April 9, 1999, to test the experimental manipulations as well as clarity and comprehensibility of news stories and questionnaires. Sixteen students enrolled in an introductory public relations course participated in this study. They were randomly assigned to one of the eight conditions. Participants were informed that the purpose of this pilot study was to explore college students' reading preferences in news, and they were encouraged to give comments on the wording and qualities of the news stories and questionnaires. The study took an average of 18 minutes to complete.

The results of the pilot study showed that the majority of participants considered the "campus security" issue more relevant to them than the "local economy" issue (mean ratings 5.13 vs. 3.29, respectively). This indicated that the within-subject manipulation (i.e., issue relevance) has construct validity. Overall, participants found the news stories credible, informative, and easy to read.

Data Collection

Fieldwork was conducted between April 13 to April 15, 1999. Participants were 136 undergraduate students currently enrolled in three sections of an introductory communication course from a mid-sized northeastern University. They were randomly assigned to one of eight conditions. Each participant was presented with a set of print material containing (1) instructions, (2) two news stories varying in degree of issue relevance, and (3) questionnaires designed to measure his/her issue perception, recall, confidence level, attention level, assessed relevance level for each story, as well as to collect some demographic and media use information. These items include age, gender, year in school, race, and frequency of newspaper use.

To prevent deliberate attentiveness to the news stories, participants were told that the purpose of the study was to find out college students' reading preferences and their judgment of news qualities. They were also instructed to read the stories as they normally would when reading a newspaper. They were required to read one news story, fill out a questionnaire regarding this story, then move on to the second news story and questionnaire at their own pace. However, they were specifically told not to turn back to the story when answering the questions. It was emphasized that "there were no right or wrong answers." Such an instruction was reinforced with a verbal direction from the experimenter, telling participants that their first impressions were most valuable to the study. The experiment procedure took 20 minutes on average. Participant were debriefed and rewarded with extra course credit for participation.

Data Analysis

The mean scores of base-rate utilization, recall, and confidence level for each group were computed using SPSS 8.0 for Windows. Independent t-tests were employed to check for a story-presentation-order effect. Since there was no evidence of an order effect present, the variable of presentation order was omitted and eight experimental conditions were collapsed into the four groups for further analyses. Paired t-tests were used to check the manipulation of issue relevance between the two stimulus stories. Tests of two-way ANOVA were employed to examine the main effects of vivid presentation and causal information, and the interaction of these two variables within each story. Descriptive statistics were also performed to analyze participant background information. The level of significance was set at .05.

RESULTS

The experiment participants (*N* = 136) were made up of 55.1% female and 44.9% male college students, with a mean age of 19.1 years. The majority of participants were White (80.9%), followed by Black (7.4%), Hispanic (5.1%) and Asian (3.7%). Most of them were freshmen (60.3%) and sophomores (30.9%). The results of the descriptive statistics regarding experiment participants also show that most of them read newspaper at least once a week (70.6%), followed by those who read several times a month (11.8%) and those who rarely read newspapers (11.0%)[1]. When these demographic variables were plotted against all the dependent variables (i.e., base-rate utilization, recall, assessed relevance, attention and confidence on the accuracy of responses) under examination in this study, none of them yielded significant correlation (r ranges from -.142 to .075). Therefore, these personal attributes were removed from further analyses involving the key dependent measurements. Issue relevance rating for each news story was checked to validate the success of manipulation. The result showed that experiment participants rated the campus security issue significantly higher than the local economy issue (5.19 vs. 3.19, paired t (132) = 9.54, $p<.001$). Therefore, the manipulation of issue relevance has face validity.

Hypotheses Testing

Six hypotheses which contained five dependent variables were tested to examine the effects of vivid presentation and causal information in counteracting the biasing influence of unrepresentative exemplification within each of the issues of high relevance and low relevance. The first three hypotheses tested the main effect of vivid presentation while the other three tested the main effect of causal information. Therefore, the main effects of vivid presentation or causal information will be the focus of the analyses for each respective hypothesis. However, due to the experimental design, in which both independent variables were operationalized simultaneously and generated four between-subject conditions, the main effect of the other independent variable and the interaction effect of the two independent variables will also be included in the report of the results regarding each hypothesis.

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[1] Only the dominant groupings were reported. Therefore, some of the percentages cited in this section do not sum up to 100%.

H_1: The vivid presentation will increase news readers' utilization of base-rate information in issue perception.

Issue of high relevance. This hypothesis was not supported. The results of univariate F test showed little evidence of such a prediction. The main effect of vivid presentation did not reach the significance level of $p<.05$ (see Table 1).

Table 1 about here

Issue of low relevance. Hypothesis 1 was not supported within this issue. Similar to the results presented for the issue of high relevance, the main effect of vivid presentation failed to have a significant impact on people's utilization of base-rate information in their issue perception (see Table 2).

Table 2 about here

H_2: The vivid presentation of base-rate information will increase news readers' attention to such information.

Issue of high relevance. This hypothesis was not supported within this issue. Hypothesis 2 predicted a significant main effect of vivid presentation on participant attention to the base-rate information. However, the results of univariate F test showed that no significant main effects were found for the presence of vivid presentation or causal information. The interaction effect of these two independent variables failed to make a difference as well (see Table 3). In general, participant perceived attention level was found to be significantly correlated with the assessed relevance of the base-rate information ($r_1 = .30$, $p<.001$). In other words, the more people considered the base-rate information to be relevant, the more attention they paid to such information.

Table 3 about here

Issue of low relevance. Hypothesis 2 was not supported within this issue. The results of univariate F test showed that the main effect of vivid presentation did not make any difference to participant perceived attention level to the base-rate information. In addition, neither the main effect of causal information nor the interaction effect of causal information and vivid presentation were found significant (see Table 4). As found in the issue of high relevance, there was a significant correlation between the perceived attention to the base-rate information and the perceived relevance of such information ($r_s = .40$, $p<.001$).

Table 4 about here

H_3: The vivid presentation of base-rate information will increase news reader recall of such information.

Issue of high relevance. This hypothesis was supported within this issue. As predicted, a significant main effect of vivid presentation was found to increase participant recall scores ($F(1, 130) = 6.07$, $p<.05$). Conversely, the presence of causal information failed to make a difference. The interaction effect of causal information and vivid presentation was not present, either (see Table 5).

Table 5 about here

Issue of low relevance. Hypothesis 3 was supported within this issue as well. The univariate F test found a significant main effect for vivid presentation ($F(1, 130) = 4.13$, $p<.05$). Nevertheless, no other significant effect was found (see Table 6).

Table 6 about here

H_4: The presence of causal information will increase news readers' utilization of base-rate information in issue perception.

Issue of high relevance. The hypothesis was supported within this issue. The utilization of base-rate information was the most direct measurement on how effective causal information counteracted the base-rate fallacy. As shown earlier in Table 1, the results of the univariate F test showed that a significant main effect was observed for the factor of causal information ($F(1, 130) = 6.48, p<.05$).

Issue of low relevance. The hypothesis was again supported within this issue. As predicted in Hypothesis 4, a significant main effect of causal information was found ($F(1, 130) = 4.92, p<.05$). However, no other significant effects were found (see Table 2).

H_5: The presence of causal information will increase news readers' assessed relevance of the base-rate information to the judgment task.

Issue of high relevance. This hypothesis was not supported within this issue. Although people who were exposed to the causal information condition generated a higher mean rating on perceived relevance (mean = 5.81) than those who was not (mean = 5.62), the main effect of causal information did not reach the significance level of $p<.05$. Similarly, the main effect of vivid presentation and the interaction effect of causal information and vivid presentation failed to make a difference as well (see Table 7).

Table 7 about here

Issue of low relevance. Hypothesis 5 was not supported within this issue. Similar to the results shown in the issue of high relevance, mean assessed relevance rating for the causal information condition (mean = 5.37) was higher than that for the non-causal condition (mean = 5.12). However, the difference did not significantly vary across these two conditions. In addition, the main effect of vivid presentation and the interaction effect of causal information and vivid presentation did not have any impact on people's assessed relevance of the base-rate information (see Table 8).

Table 8 about here

H_6: The presence of causal information will increase news readers' perceived confidence in the accuracy of their judgments.

Issue of high relevance. This hypothesis was not supported within this issue. Hypothesis 6 predicted a significant main effect of causal information on people's confidence in their judgment accuracy. However, the results of univariate F test on this variable indicated otherwise. None of the variables made a significant difference on participant confidence level (see Table 9). Overall, the average participant confidence levels were significantly correlated with the accuracy of judgments across both causal and non-causal conditions ($r_s = .56$, $p < .001$).

Table 9 about here

Issue of low relevance. Hypothesis 6 was not supported within this issue, either. Although the presence of causal information had a positive effect on people's utilization of the base-rate information, such an influence did not transfer to participant ratings of their perceived confidence on the accuracy of their judgments. No significant effect was observed within the univariate F test (see Table 10). In fact, the average participant ratings on their confidence levels were significantly correlated with the accuracy of their responses across conditions ($r_s = .59$, $p < .001$).

Table 10 about here

Discussion

Findings

Partial support for the hypotheses was observed in this experiment. First, vivid presentation of the base-rate information (i.e., use of an infographic) increased news readers' recall of such information. Second, the presence of causal information was found to increase news readers' utilization of the base-rate information. Both significant findings were evident in the issues of high relevance and of low relevance. Conversely, little evidence of significant impact was found for the rest of the dependent variables. The presence of causal information did not make any difference to the assessed relevance level that news readers attributed to the base-rate information. Nor were people exposed to the causal-information condition more confident in the accuracy of their judgment. Similarly, the presence of vivid presentation failed to increase news readers' utilization of the base-rate information and to increase their perceived attention level to such information.

Explanations

Effect of vivid presentation. The results of this experiment showed that the presence of vivid presentation increased news readers' recall of the base-rate information. The vivid presentation of the base-rate information with an infographic enhanced the visibility of the information and facilitated the processing of such information due to the information redundancy and information visualization. In this sense, news readers were not only more likely to notice the information but also more likely to retain the information. With such cognitive advantages, the retained information was more accessible and thus, more easily recalled (Anderson, 1995). This experiment, therefore, confirmed the vividness effect, especially when the task under examination is memory-based.

With the above-mentioned notion in mind, it is not surprising that vivid presentation failed to produce a significant main effect on news readers' utilization of the base-rate information. Utilization of the base-rate information in issue perception was primarily a comprehension-driven process. Since the comprehension is unnecessarily a memory-based cognitive process (see Tulving, 1962 for a distinction between recall and comprehension), its effect to the influence of vividness effect is less predictable.

What is more perplexing is the lack of significant effect of vivid presentation on news readers' perceived attention to the base-rate information. The reason why vivid presentation was expected to have a positive impact on people's recall was because of its attention-getting quality. The more one pays attention to certain information, the more is one expected to remember such information. So, why did people in the vivid presentation condition pay no more attention to the base-rate information than those in the non-vivid-presentation condition? A possible explantion is that these ratings did reflect participants' attention levels and the lack of significant difference across conditions was the result of some mediating artifacts. First, the nature of the base-rate information employed in this experiment may have masked the impact of the vivid presentation on perceived attention. Specifically, the experiment was designed to simulate an unrepresentative exemplification condition in order to test the effects of the independent variables in counteracting the biasing influence. Under such a condition, the base-rate information (i.e., survey results) used was inevitably inconsistent with most of the exemplars (i.e., individual interviews) featured in this experiment. In this sense, the base-rate information seemed more or less a surprising turnout, which may have attracted participants' attention on its own merit. After all, information that activates an inconsistent schema is found to attract more attention and to demand more processing effort (e.g., Wicks & Drew, 1991). Therefore, the lack of significant difference in news readers' attention levels between the vivid presentation and non-vivid presentation conditions may have been caused by the overall increased attention to the inconsistent base-rate information.

Second, participants' assessed relevance of the base-rate information may also be used to shed some light on the speculation of intervening artifacts. People pay attention to things that are vividly presented, but they also pay attention to things that they deem relevant (e.g., Bar-Hillel, 1983). As the results of this experiment showed, participants considered the vividly presented base-rate information as relevant as the non-vividly presented version in both issues. Since participants in both conditions did not differ on their assessed relevance ratings, it is not surprising that they also paid the same amount of attention to the two presentation versions of the base-rate information. The data showed that there was a significant correlation between the assessed relevance and attention ratings in both issues ($r_s = .30$, $p<.001$ for the issue of high relevance, and $r_s = .40$, $p<.001$

for the issue of low relevance). In addition, the assessed relevance questions asked in this experiment preceded the perceived attention questions. Therefore, it is likely that people in the vivid condition paid no more attention to the base-rate information than those in the non-vivid condition because they considered the two versions of the base-rate information as relevant as each other.

The question remains why people recalled better in the vivid-presentation condition when they considered themselves as attentive to the base-rate information as their counterparts in the non-vivid-presentation condition. One possible explanation is that the nature of the base-rate information employed in this experiment was in effect. As argued earlier, the surprising and schematically inconsistent nature of the base-rate information may have masked the effect of vivid presentation on participants' perceived attention levels. Information of such a nature tends to require more processing effort to retain (Wicks & Drew, 1991). In this sense, the vividly presented base-rate information provided a stronger visual cue to facilitate information processing. The ease of information visualization which was enhanced by the vividly presented base-rate information, therefore, improved people's recall of such information.

Effect of causal information. As the results of the experiment revealed, the presence of causal information had a positive impact on news readers' utilization of the base-rate information to generate their issue perceptions. On average, people who read news stories with causal information present had a higher accuracy of issue perceptions than those who read news stories without a causal account did. Such an impact was sustained regardless of the degree of issue relevance to readers. As argued earlier, knowing "why" provides readers a stronger cue to organize the information featured in the news story. The cause-effect relation is likely to highlight the flow of a storyline, to strengthen the association of related information, and to facilitate the reconstruction of the script from all the story elements tied in with the causal schema activated by the causal information. Therefore, news readers who are exposed to news stories containing causal information are more likely to comprehend the story more fully and thus, less likely to commit the perception fallacy.

Conversely, there was no significant difference in the self-reported relevance ratings between the causal-information and non-causal-information conditions. One possible explanation can be derived from the ordering of questions. Ratings on both types of information consecutively may have given participants an opportunity to compare the importance of the information. The opportunity to compare may have triggered their knowledge of science, which stresses on the value of aggregate statistics over individual anecdotes. In other words, participant ratings may reflect their knowledge of which type of information should be more relevant to the judgment task and may not necessarily reflect their actual practice in utilizing the base-rate information.

Equally surprising was the lack of significant results in participants' ratings on their confidence level with the accuracy of their judgments. People who were exposed to the causal information condition generated a higher mean score in utilizing the base-rate information (i.e., produced more accurate responses). However, they were as confident in the accuracy of their responses as their counterparts in the non-causal information condition, whose mean base-rate utilization score was significantly lower. One possibility is that some unanticipated artifact may have inflated people's confidence ratings, especially those who were in the non-causal information condition. Confidence refers to one's belief in one's ability to successfully complete certain tasks. One's confidence level increases when one believes that he/she has successfully completed the task. Such belief could be rather subjective, especially when it is confounded with one's subjective assessment of the ease of the task. It is possible that experiment participants may have rated their confidence levels based on how easy they perceived the task to be instead of assessing the accuracy of their judgments.

Limitations of the Study

Limitations of this study include artificiality and weak external validity, which are common to most experiments. However, tremendous effort was taken to make sure that the final versions of the news stories were as realistic as possible and the two news stories were relatively comparable in terms of length, layout, and heading treatment. In addition, since the purpose of this study was to examine news readers' issue perception in the context of news processing, the content of news stories was what really mattered. The appearance of the news stimuli should not have posted any threat to the internal validity of this experiment.

The narrow and homogenous sample of college undergraduate limits the ability to generalize the experimental findings to larger and more diverse populations. However, using the unrepresentative sample should not be a major concern, since the procedure of random assignment had been carefully executed in this experiment, one should be comfortable with the comparability of the participants across conditions. The college undergraduate pool should not post any threat to the internal validity to the study. Besides, the pool of freshmen may be the best choice in an academic setting. As a recent statistic shows, the median years of school competed by U.S. citizens is 12.7 (Kominski, 1991); freshmen are very close to this median. In this sense, the choice of experiment participants for this study did have some merit.

Significance of the Findings

The findings of the present study have advanced the existing mass communications literature in the biasing effects of exemplification on issue perception. Through random assignment, manipulating the independent variables, assessing the outcomes, and eliminating (or minimizing) the intrusiveness of extraneous variables, this study was able to establish the causal relationship between vivid presentation and recall of base-rate information, as well as the one between causal information and the utilization of the base-rate information. These findings indicate that 1) the vivid presentation of the base-rate information enables news readers to remember specific factual information related to the base-rate information; 2) the presence of causal information in news story helps news readers utilize the more valid base-rate information for accurate issue perception; and 3) the observed effects sustain both in the issues of high relevance and low relevance to news readers.

The contribution of these findings is significant both on the theoretical level and the practical level. On the theoretical level, these findings demonstrate partial, but essential, support for the base-rate information processing model. By strengthening the structure features of message in facilitating the information accessibility and text comprehension, a news writer is able to help news readers counteract the dominant influence of unrepresentative exemplification and generate more accurate issue perceptions under the base-rate fallible condition. On the practical level, these findings indicate that individual can avoid committing the base-rate fallacy in the context of news processing without any conscious efforts. Journalists can induce a more accurate issue perception from the reader, even when it is impossible to feature cases of majority/minority exemplars in proportion to the distribution of the base-rate information. These will, in consequence, result in a better and more accurately informed society, which is essential to produce more reliable and soundly grounded public opinions.

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Figure 1. Independent Variables and Experimental Manipulation

Story Presentation Order

Story 1: High Relevance
Story 2: Low Relevance

Causal Information

Vivid Presentation

	Present	Absent
Present	Causal base rate with text & infographic	Non-causal base rate with text & infographic
Absent	Causal base rate with text only	Non-causal base rate with text only

Story 1: Low Relevance
Story 2: High Relevance

Causal Information

Vivid Presentation

Present	Absent	
Causal base rate with text & infographic	Non-causal base rate with text & infographic	Present
Causal base rate with text only	Non-causal base rate with text only	Absent

Table 1. ANOVA on Utilization of Base-rate Information for Issue of High Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	.84	.37			
Information	(NC)	66	.65	.48	6.48	1	$p<.05$
Vivid	(G)	66	.80	.40			
Presentation	(T)	68	.69	.47	2.43	1	n.s.
Two-way	(CG)	33	.88	.33			
Interactions	(CT)	35	.80	.41			
Causal x Vivid	(NCG)	33	.73	.45	.24	1	n.s.
	(NCT)	33	.58	.50			

* One point was assigned to each correct response and zero point was assigned to the incorrect response.
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 2. ANOVA on Utilization of Base-rate Information for Issue of Low Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	.79	.41			
Information	(NC)	66	.62	.48	4.92	1	$p<.05$
Vivid	(G)	67	.75	.44			
Presentation	(T)	67	.67	.47	.92	1	n.s.
Two-way	(CG)	34	.82	.39			
Interactions	(CT)	34	.76	.43			
Causal x Vivid	(NCG)	33	.67	.48	.04	1	n.s.
	(NCT)	33	.58	.50			

* One point was assigned to each correct response and zero point was assigned to the incorrect response
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 3. ANOVA on Attention to Base-rate Information for Issue of High Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	4.71	1.24			
Information	(NC)	66	4.41	1.31	1.85	1	n.s.
Vivid	(G)	66	4.68	1.29			
Presentation	(T)	68	4.44	1.27	1.20	1	n.s.
Two-way	(CG)	33	4.88	1.29			
Interactions	(CT)	35	4.54	1.20			
Causal x Vivid	(NCG)	33	4.48	1.28	.17	1	n.s.
	(NCT)	33	4.33	1.36			

* On an unipolar scale of 1 to 7, with 1 meaning "Not at all" and 7 meaning "Very."
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 4. ANOVA on Attention to Base-rate Information for Issue of Low Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	4.57	1.44			
Information	(NC)	66	4.62	1.29	.04	1	n.s.
Vivid	(G)	67	4.75	1.27			
Presentation	(T)	67	4.45	1.44	1.60	1	n.s.
Two-way	(CG)	34	4.71	1.38			
Interactions	(CT)	34	4.44	1.50			
Causal x Vivid	(NCG)	33	4.79	1.17	.02	1	n.s.
	(NCT)	33	4.45	1.39			

* On an unipolar scale of 1 to 7, with 1 meaning "Not at all" and 7 meaning "Very."
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 5. ANOVA on Recall of Base-rate Information for Issue of High Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	.69	.47			
Information	(NC)	66	.62	.49	.80	1	n.s.
Vivid	(G)	66	.76	.43			
Presentation	(T)	68	.56	.50	6.07	1	$p<.05$
Two-way	(CG)	33	.79	.42			
Interactions	(CT)	35	.72	.50			
Causal x Vivid	(NCG)	33	.60	.45	.02	1	n.s.
	(NCT)	33	.52	.51			

* One point was assigned to each correct response and zero point was assigned to the incorrect response.

Variables

C: causal information

NC: non-causal information

G: Text with infographic

T: Text only

CG: causal information with text and infographic

CT: causal information with text only

NCG: non-causal information with text and infographic

NCT: non-causal information with text only

Table 6. ANOVA on Recall of Base-rate Information for Issue of Low Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	.71	.46			
Information	(NC)	66	.62	.49	1.09	1	n.s.
Vivid	(G)	67	.75	.44			
Presentation	(T)	67	.58	.50	4.13	1	$p<.05$
Two-way	(CG)	34	.76	.43			
Interactions	(CT)	34	.65	.49			
Causal x Vivid	(NCG)	33	.73	.45	.34	1	n.s.
	(NCT)	33	.52	.51			

* One point was assigned to each correct response and zero point was assigned to the incorrect response

Variables

C: causal information

NC: non-causal information

G: Text with infographic

T: Text only

CG: causal information with text and infographic

CT: causal information with text only

NCG: non-causal information with text and infographic

NCT: non-causal information with text only

Table 7. ANOVA on Relevance of Base-rate Information for Issue of High Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	5.81	1.55			
Information	(NC)	66	5.62	1.34	.57	1	n.s.
Vivid	(G)	66	5.80	1.54			
Presentation	(T)	68	5.63	1.36	.48	1	n.s.
Two-way	(CG)	33	5.88	1.65			
Interactions	(CT)	35	5.74	1.46			
Causal x Vivid	(NCG)	33	5.73	1.44	.02	1	n.s.
	(NCT)	33	5.51	1.25			

* On an unipolar scale of 1 to 7, with 1 meaning "Not at all" and 7 meaning "Very."
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 8. ANOVA on Relevance of Base-rate Information for Issue of Low Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	5.36	1.79			
Information	(NC)	66	5.12	1.73	.65	1	n.s.
Vivid	(G)	67	5.15	2.02			
Presentation	(T)	67	5.34	1.46	.38	1	n.s.
Two-way	(CG)	34	5.12	2.11			
Interactions	(CT)	34	5.62	1.39			
Causal x Vivid	(NCG)	33	5.18	1.96	1.03	1	n.s.
	(NCT)	33	5.06	1.50			

* On an unipolar scale of 1 to 7, with 1 meaning "Not at all" and 7 meaning "Very."
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 9. ANOVA on Confidence of Judgment Accuracy for Issue of High Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	5.58	1.34			
Information	(NC)	66	5.80	1.10	.99	1	n.s.
Vivid	(G)	66	5.70	1.26			
Presentation	(T)	68	5.69	1.20	.01	1	n.s.
Two-way	(CG)	33	5.70	1.42			
Interactions	(CT)	35	5.49	1.27			
Causal x Vivid	(NCG)	33	5.70	1.10	.99	1	n.s.
	(NCT)	33	5.91	1.10			

* On an unipolar scale of 1 to 7, with 1 meaning "Not at all" and 7 meaning "Very."
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

Table 10. ANOVA on Confidence of Judgment Accuracy for Issue of Low Relevance

Variables		n	Mean*	SD	*F*	df	significance
Causal	(C)	68	5.85	1.32			
Information	(NC)	66	5.91	1.08	.07	1	n.s.
Vivid	(G)	67	5.99	1.11			
Presentation	(T)	67	5.78	1.29	.98	1	n.s.
Two-way	(CG)	34	6.03	1.06			
Interactions	(CT)	34	5.68	1.53			
Causal x Vivid	(NCG)	33	5.94	1.17	.49	1	n.s.
	(NCT)	33	5.88	0.99			

* On an unipolar scale of 1 to 7, with 1 meaning "Not at all" and 7 meaning "Very."
Variables
C: causal information
NC: non-causal information
G: Text with infographic
T: Text only
CG: causal information with text and infographic
CT: causal information with text only
NCG: non-causal information with text and infographic
NCT: non-causal information with text only

"You're No Jack Kennedy!"
The Influence of Post-Debate Commentary on Candidate Evaluations

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Abstract

This paper presents the results of a natural experiment conducted during a vice-presidential debate that occurred during the 2000 Election Campaign. It examines the effect of post-debate commentary on the criteria that subjects use when evaluating candidates. Subjects were assigned to one of four conditions, "debate only," "debate-plus CBS commentary," "debate-plus ABC commentary" and "debate-plus NBC commentary." After watching the debate, subjects completed a questionnaire which contained both close-ended and open-ended responses. This particular paper presents the results of an analysis conducted on the open-ended responses. The findings demonstrate that while news verdicts influenced the criteria subjects used in their evaluations of the candidates at the categorical level (e.g., issue, trait or performance), they did not influence the specific issue, trait and performance dimensions (e.g., abortion, charisma, articulate). Additionally, although the findings regarding framing effects were only partially supported, the results provide important insight into the weight that subjects assigned to each category when comparing the two vice-presidential nominees.

Introduction

Following the debate between presidential candidates John F. Kennedy and Richard M. Nixon in 1960, televised debates have become an important source of political information for voters during presidential campaigns (Kraus 1988; Sears and Chaffee 1979). This is especially true among undecided voters who use these opportunities to learn about the presidential candidates and make vote choices (Chaffee and Choe 1980; Brydon 1985). While previous studies have consistently demonstrated the positive influence that debates can have on learning and attitude formation (Benoit, Webber and Berman 1998; Hullett and Louden 1998), little outside of Lemert *et al.*'s (1991) study is known about the effects of specific post-debate commentaries on viewers. Among the studies that have examined the effect of news verdicts, findings demonstrate that they can reinforce and possibly influence individuals' attitude toward political candidates (McKinnon, Tedesco and Kaid 1993; Lowry, Bridges and Barefield 1990; Steeper 1980; Lemert *et al.* 1991; Lemert 1996), especially among undecided voters. However, it is still somewhat unclear what specific criteria individuals use in this evaluative process.

Extant research in political communication has focused on the agenda-setting (Iyengar and Kinder 1987; McCombs and Shaw 1972), priming (Krosnick and Kinder 1990; Iyengar and Kinder 1987; Iyengar, Peters and Kinder 1982) and framing (Nelson and Kinder 1996) effects of mass media on individuals exposed to newscasts and televised advertisements. According to these studies, when individuals are exposed to news stories or political advertisements, the criteria emphasized in these messages can influence the criteria individuals use when evaluating political candidates. For example, after watching a political news story on the Gulf War, viewers might evaluate the president using his foreign policy accomplishments as the primary criteria (Iyengar and Simon 1993). Accordingly, this same type of effect could occur in response to news verdicts. Specifically, after viewing a debate, audiences might use the criteria discussed by the commentators to evaluate the candidates along those same dimensions. To examine the potential priming and framing effect of post-debate commentary in more depth, a natural experiment was conducted to examine subjects responses to the vice-presidential debate during the 2000 presidential election campaign. This paper presents the one portion of the results from a larger study examining the effects of the post-debate commentary.

Literature Review

Debates

Research has found that debates significantly influence voter learning (Benoit, Webber and Berman 1998; Drew and Weaver 1991; Lemert, Elliott, Nestrold and Rarick 1983; Miller and MacKuen 1979). Although these studies have concluded that debates have very little attitudinal or behavioral effects on strong partisans and individuals with pre-existing attitudes toward candidates (Hagner and Rieselbach 1978), they have found that among undecided voters, debates can serve as an important source of political information which audience members could eventually use when making a vote choice. Additionally, among undecided voters, Hullett and Louden (1998) found that issue and image perceptions are often integrated into individuals' judgments of candidate performance which, in turn, can influence attitudes and vote choice.

News Verdicts

Presidential debates, however, are often followed by post-debate commentary that summarizes and interprets the debate for viewers. Although few studies have examined the impact of Steeper (1978) demonstrated that after the 1976 Carter-Ford debate, Ford's mistake regarding the Soviet Union's domination of Eastern Europe did not influence audience perceptions until it was identified and interpreted by the news media following the debate. Recent studies have found that post-debate commentary can influence viewers' perceptions of who won the debate as well as their evaluations of the political candidates. For example, Lowry, Bridges and Barefield (1990) examined the perceptions and attitudes of viewers following the 1988 Dukakis-Bush debate and found that the control group exposed to the debate only indicated that Bush had won the debate. However, the group exposed to *ABC*'s post-debate special indicated that Dukakis had won the debate, mirroring ABC's commentary and snap poll. Additionally, McKinnon, Tedesco and Kaid (1993) found that the commentary following the 1992 presidential debate between Clinton, Perot and Bush slightly lowered Clinton's ratings among their subjects.

Lemert, Elliott, Bernstein, Rosenberg, and Nestvold (1991) conducted a content analysis of post-debate analysis of the 1976, 1980, 1984, and 1988 presidential debates. Journalists were the source of nearly two-thirds of all verdicts in the post-debates analyses. Nearly 85 percent of the verdicts were candidate-specific, while only 10 percent dealt with the debate itself. Finding very little difference between the direction of verdicts among the networks, they concluded no network was more positive or negative toward a specific candidate and anointed them "carbon copies of each other" (p. 64). Lemert *et al.*'s (1991) research also included a time-series survey analysis of the 1988 campaign where they interviewed one group of respondents immediately after each debate and other groups of respondents for several consecutive nights following the debate after the evening news. The time-series showed significant shifts in the direction of the commentary following each of the debates. With the exception of Quayle, negative news verdicts did not seemed to affect their targets. The news verdict effect extended to voting preferences. The researchers concluded: "Media verdicts have their broadest and most long-lasting effects when the news media uniformly present the same verdict(s) and campaign events allow them continually to repeat those verdicts over a continuous period of several days" (p. 176).

During the 1992 debates, Lemert (1996) performed a content analysis of network verdicts and surveyed respondents following the debates in the same manner as his 1988 study (Lemert *et al.* 1991). A news verdict effect was found for each of the four 1992 presidential debates. The effect was strongest for the candidate deemed by the media as the winner. Negative verdicts, however, did not seem to significantly influence attitudes toward the candidate. Unlike the 1988 study, no correlation was found between news verdict effect and voting preferences. Additionally, for the first time in recent elections, journalists were the most frequent source of performance verdicts.

While these studies have provided important insights into our understanding of the effects of news verdicts, a number of areas still need to be explored. Specifically, although post-debate commentary might influence candidate perceptions and evaluations, it is not clear *what* criteria audience members use when forming their opinions. For example, during a debate, audiences are exposed to a large amount of information regarding candidates' issue positions and future promises. Research has demonstrated that individuals will often try to process this information by using cognitive shortcuts such as heuristics and schemas (Krosnick and Kinder 1999; Iyengar, Peters and Kinder 1982). Along these lines, post-debate commentary might assist with this type of processing by making some issues more salient than others thereby influencing the criteria that audiences use in their evaluations of the candidates. In other words, news verdicts could have important priming effects that influence the vote choice of undecided voters viewing the debate.

Priming and the Role of Agenda-Setting

Research has demonstrated that during political campaigns, the mass media can have an agenda-

A distinction must be made, however, between media and audience frames. Media frames are central organizing ideas around which the story is based, while audience frames are the schema that guide how individual process information. Individual differences in framing can be illustrated similarly to the way they were for priming. Elites/interest groups → Media frames → Audience frames → Attributions of causal/treatment responsibility. Frame-building occurs as elites influence media frames or as news organizations themselves construct frames to focus, summarize or animate stories. Frame-setting occurs when media frames determine audience frames. Finally, individual-level effects of framing occur when the audience frames influence attribution of responsibility (Iyengar 1991).

Research Hypotheses

Based on this review of previous literature, six predictions or hypotheses can be proposed. The initial five hypotheses address the priming effect. Specifically, individuals who are exposed to post-debate commentaries might use the criteria emphasized by the commentators to evaluate the candidates, while individuals who do not attend to the commentary could use different criteria. Therefore, the first hypothesis is:

H1: ***The categories (e.g., issue, trait or debate performance) emphasized in the post-debate commentary will match the categories subjects use in their candidate evaluations.***

The review of literature on priming suggests that different post-debate commentary might emphasize some criteria more than others. For example, while one network might focus more on a candidate's debate performances, another network might focus more on the traits that the candidate exhibited or the candidate's issue position. Based on the research conducted on priming, these differences should be reflected in the criteria individuals use to evaluate the candidates. Therefore, the next set of four hypotheses are:

H2: ***Differences in the categories used by subjects in their evaluations of candidates will reflect the differences in the categories emphasized in each network's post-debate commentary.***

H3a: ***The specific issue dimensions emphasized in each network's post-debate commentary will match the specific issue dimensions subjects use in their candidate evaluations.***

H3b: ***The specific trait dimensions emphasized in each network's post-debate commentary will match the specific trait dimensions subjects use in their candidate evaluations.***

H3c: ***The specific debate performance dimensions emphasized in each network's post-debate commentary will match the specific debate performance dimensions subjects use in their candidate evaluations.***

Nelson and Kinder (1996) and Nelson, Clawson and Oxley (1997) found that media frames influence opinion by altering the weight or importance attributed to an attitude object thus making some considerations seem more important than others. For example, a frame commonly used in political discussion is the pro-con dimension (Kindel 1993). Following a debate, it is likely that commentators will discuss how well the candidates performed on certain dimensions and/or how they failed to perform on others. Therefore, the next prediction is:

H4: ***Subjects will frame the issues, traits and performance of the candidates in the same way that the post-debate commentary frames these dimensions.***

News verdicts could have important priming effects that influence the vote choice of undecided voters viewing the debate. Hullett and Louden (1998) found that among undecided voters, issue and image perceptions are often integrated into individuals' judgments of candidate performance which, in turn, can influence attitudes and vote choice. Because the questionnaire forced a vote choice and did not allow respondents to choose "undecided," the following hypothesis was formulated to address this concept:

H5: ***News Verdicts will have little to no influence on strong partisans' vote choice.***

Methods

Overview and Subjects

To examine the effects of debates and post-debate commentary on viewers, a natural experiment was conducted during the 2000 Presidential Campaign using the vice presidential debate. The debate was held on October 5, 2000, in Danville, Kentucky on the Centre College campus. It was broadcast live on all three major networks, *CBS*, *ABC* and *NBC*. Bernard Shaw, an anchorman from CNN, served as the moderator. The participants were former Defense Secretary, Richard B. Cheney, of Wyoming, the vice presidential candidate for the Republican Party and U.S. Senator, Joseph Lieberman of Connecticut, the vice presidential nominee for the Democrat Party. The candidates answered pre-determined questions posed by Shaw who alternated which candidate addressed each question first. The candidates were each given two minutes to respond.

The subjects in the study were 130 undergraduate students enrolled in Mass Communication courses at a Midwestern University. The students were randomly assigned to one of four conditions, "debate-only," "debate-plus *ABC* commentary," "debate-plus *CBS* commentary" and "debate plus *NBC* commentary." Sixty percent (60%) of the subjects were female and forty (40%) were male. Thirty-six (36%) of the subjects identified themselves as Democrats, nineteen percent (19%) identified themselves as Republicans, five percent (5%) as Green Party members, seven percent (7%) as another party and thirty-three percent (33%) did not affiliate with a party.

Experience

Subjects reported to a large room prior to the debate and received a number randomly assigning them to one of the four conditions. After the subjects had arrived, they were escorted to their assigned room and asked to complete an 18-item pre-test questionnaire containing close-ended questions. The subjects watched the entire vice-presidential debate live. Following the debate, the subjects assigned to the "debate-only" condition completed a 28-item post-test questionnaire that included five open-ended questions. After this was completed, they left the experiment sight. In the other three conditions, subjects watched either ABC, CBS, or NBC's half-hour post-debate special. Immediately following the commentary, they completed the same post-test questionnaire.

Measures

The primary focus of this paper is the analysis of two open-ended questions that were randomly ordered on the post-test questionnaires. The questions were worded as follows:

1. *Based on what you saw tonight and anything else you already knew, is there anything about [Candidate's Name] that might make you want to vote for him? If yes, please describe.*
2. *Based on what you saw tonight and anything else you already knew, is there anything about [candidate's name] that might make you want to vote against him?*

The subjects answered these two questions for each of the vice-presidential candidates, resulting in four answer categories.

Analysis

Responses to these four questions were qualitatively sorted into the categories of specific issue mentions, candidate trait mentions or debate performance mentions. The coding was completed independently by the two authors with a .98 reliability rating. The following coding schema is used in the analysis.

Issue: Twelve issue categories were identified in the data: abortion, economy, education, environment, equality, military, social security, taxes, social programs, working class, miscellaneous and overall issues. For example, comments regarding pro-life, pro-choice, RU-486 abortion pill and partial birth abortions such as "I ...like his view on abortion. He seemed very opened minded about it," were coded as "abortion." Additionally, the valence of subjects' trait evaluations were also coded.

Trait: Candidate trait categories identified by Johnston, Brady, Blais and Crete (1992) in their study on candidate image formation were used as categories for coding subjects' open-ended responses regarding the vice-presidential nominees' traits. They included, cares about people like me, charisma, compassion, humor, intelligence, leadership, morality, personable, trustworthy, experience and visionary. Additionally, the valence of subjects' trait evaluations were also coded. For example, if a subject's response stated, "he lacks leadership," this was coded as leadership and "negative." If a statement included references to two or more traits, then the traits were coded as separate statements.

Debate Performance: Subjects' responses that specifically addressed the candidates' performance in the debate were coded and separated under broader themes. These themes or categories included: articulate, believable, composed, engaging, physical actions, straightforward and well-briefed. Similar to the coding schema for trait evaluations (see above), the valence of these evaluations was also coded. For example, if a subject stated, "He seemed to always get straight to the point of the questions," this was coded as straight-forward. Responses referring to physical actions of the candidate, such as looking into the camera or making faces at his opponent were coded under the category of "physical action."

Summaries of Debate and Post-Debate Commentaries

Although the primary focus of this study is on the open-ended responses of participants, to provide context for the findings a content analysis of the debate and the post-debate commentary was conducted by the researchers. The same coding schema used to evaluate subjects' open-ended responses was applied to the transcripts of the debate and post-debate commentaries. (Although the larger project included a content analysis of the debate and commentary, review found that the debate/commentary coders had used slightly different criteria. Therefore, the debate and commentaries were recoded independently by the authors resulting in an inter-coder reliability of .97.) Although the data for the post-debate commentary is included in the findings section, following is a brief summary of the debate and post-debate commentaries.

Summary of Vice-Presidential Debate: In general, the debate questions focused primarily on issues. Specifically, the topics of the questions included budget surplus, public education, equitable pay for women, RU-486 (e.g., an abortion drug), the overthrow of Yugoslavia's Slobodan Milosevic, Foreign policy, Middle East Crisis, Saddam Hussein and Iraq, oil prices, Social Security, bipartisanship in politics, racial profiling, gay constitutional rights, and qualifications for the job of vice president. Additionally, two questions were posed to Cheney that addressed potentially sensitive subjects for both candidates. Cheney was asked if he had noticed a shift in Lieberman's positions referring to his recent retreat from criticizing Hollywood and violent films. Additionally, Cheney was asked why he had voted against a bill when he was in the U.S. Senate that supported drilling in Wyoming, but co-sponsored another bill that supported drilling in Alaska's Arctic National Wildlife Refuge. Cheney responded to both of these questions before Lieberman. The debate ended with two minute closing statements from both candidates.

Overview of Post-Debate Commentary: To understand the potential effect that the post-commentary debate had on subjects' responses, a content analysis was conducted so comparisons between networks can be made. Specifically, the post-debate commentary for *CBS*, *ABC* and *NBC* was coded using the same criteria, categories and coding scheme used for the open-ended responses. While these findings appear in the next section, a few additional comments need to be addressed. First, after the debate and during the post-debate commentary, *NBC* and *CBS* both went to breaking news regarding a crisis in Yugoslavia. Second, each of the three post-debate specials included different segments. For example, *ABC* and *NBC* had a group of voters discuss their reactions to the debate as part of the post-debate commentary. While, *NBC* devoted time to a "Truth Squad" where an analyst determined whether the candidates' promises were feasible and accurate.

Findings

Hypothesis 1 and 2
Priming Effects of Categories

Hypothesis 1, which predicted that the post-debate commentary would influence the criteria subjects used to evaluate the vice-presidential candidates, was supported. Table 1a shows the dominant focus of the commentary and the open-ended responses of the subjects. The results from the three networks for both the post-debate commentary and the open-ended responses of subjects in the debate plus commentary conditions were each collapsed and compared to the open-ended responses of the debate only condition. Out of 182 statements made by the commentators on the three networks combined, a majority (54%) focused on the vice-presidential candidates' performances during the debate, twenty-seven percent (27%) of the statements focused on the candidates' issue positions and only nineteen percent (19%) of the statements focused on the candidates' traits. When these percentages are compared to the open-ended responses of the subjects in the "debate-plus commentary" conditions, the data indicates that out of the 574 statements made by subjects, performance also was the most frequently mentioned statement (44%) followed by issues (37%) and traits (19%). On the other hand, the statements of subjects in the "debate only" condition focused more on issues (47%), followed by performance (35%) and traits (18%).

The findings also provide support for Hypothesis 2 which predicted that the criteria emphasized in each network's post-debate commentary will match the criteria used by subjects to evaluate the candidates. Table 1b shows the number of statements made by the anchors regarding issues, traits and debate performance. Table 1c shows the number of statements made by subjects in each condition regarding issues, traits and debate performance. According to the findings, *CBS* and *ABC*'s post-debate commentary focused more on the candidates' debate performances while *NBC*'s post-debate commentary focused more on the candidates' issue positions. When this is compared with the open-ended responses, the data, which is presented in Table 1c, shows that while subjects' statements in the *CBS* and *ABC* conditions focused more on performance, subjects' statements in the *NBC* condition focused more on issues.

Hypothesis 3a
Priming Effects of Specific Issue Dimensions

Hypothesis 3a, which predicted that the specific issues emphasized in the post-debate commentary will match the specific dimensions used in subjects' evaluations of the vice-presidential candidates, was only partially supported. Table 2a shows the number of times a specific issue was mentioned in the three stations' commentaries and Table 2b shows the number of times the specific issues were identified by the subjects in their open-ended responses. It is interesting to note that while none of the stations discussed the vice-presidential candidates' position on abortion, the issue was frequently mentioned by subjects in all four conditions. Additionally, there was a match between the most frequently mentioned issue dimension in the *ABC* and *NBC* commentary and the open-ended responses of subjects in those same conditions regarding the military and foreign policy. It should be noted, however, that the military also was the second most frequently mentioned criteria in the debate only condition.

In the CBS condition, education, equality and social security were discussed most frequently during the post-debate commentary. When this is compared to subjects' open-ended responses in the CBS condition, while equality was among the most frequently mentioned issues, education and social security were mentioned less. In the ABC condition, the only two issues mentioned other than the military were the environment and equality. When this is compared to subjects' open-ended responses in the ABC condition, the environment and equality were mentioned more frequently than the other issues, but less than taxes. Finally, in the NBC condition, taxes were discussed most frequently during the post-debate commentary and it was also mentioned most frequently behind abortion and the military.

Hypothesis 3b
Priming Effects of Specific Trait Dimensions

Hypothesis 3b, which predicted that specific trait dimensions emphasized in each network's post-debate commentary would match the specific trait dimensions subjects use in their candidate evaluations, was partially supported. The data for the post-debate commentaries are presented in Table 3a and the data for subjects' open-ended responses are presented in Table 3b. In the ABC condition, there was a match between the frequency of statements regarding the candidates' morality. Specifically, while a majority, or eighteen percent (18%), of the statements in the commentary referenced morality, a majority, or forty percent (40%), of subjects' statements also referenced morality. In the NBC condition, there also was a match regarding the candidates' experience. Specifically, while a majority, or thirty-three percent (33%), of the statements made by the NBC commentators referenced experience, a majority, or twenty-three percent (23%) of subjects responses referenced experienced. However, charisma and experience were mentioned more frequently by the CBS commentators, while trustworthiness and humor were mentioned more frequently by subjects.

Hypothesis 3c
Priming Effects of Specific Debate Performance Dimensions

Hypothesis 3c, which predicted that specific debate performance dimensions emphasized in each network's post-debate commentary would match the specific debate performance dimensions subjects use in their candidate evaluations, was not supported. The only condition in which the majority of statements made by the commentators matched the majority of statements made by the subjects referenced engaging and straight forward. Specifically, as shown in Table 4a, during the CBS post-debate commentary, seventeen percent (17%) of the statements referred to how engaging the candidates were during the debate and twenty-four percent (24%) of the statements referred to the straight forwardness of the candidates' answers. Similarly, a majority of the statements made by subjects in the CBS condition, shown in Table 4b, also referenced engaging (31%) and straight forward (21%). However, in the other two conditions, there weren't any clear matches between statements regarding the specific debate performance dimensions.

Qualitative Analysis of the Post-Debate Commentary and Open-Ended Responses

While the findings from the quantitative coding of the open-ended response partially support the presence of priming, a quick qualitative analysis provides more insight into the data that supports this prediction. Specifically, when comparing the commentary with subjects' open-ended responses, a number of similarities in content as well as in the specific words used were identified. For example, a subjects' evaluation of Cheney's views on the military mirrored the evaluations made by the commentators in the condition. Specifically, in an exchange between two commentators regarding the issues emphasized by the Bush-Cheney campaign, Tom Brokaw stated:

> *And on military preparedness, which the Bush campaign continues to come back to even though there's not much evidence out there that the public is responding to that...*

Tim Russert concurred with Brokaw stating:

> *Dick Cheney presided over the end of the Cold War, he's passionate about that subject.*

A subject who watched this commentary listed one of the reasons he/she would not vote for Dick Cheney as follows:

> *I don't think we need to devote so much money to military operations and salaries when our military is already second to none. There are much more important areas where that money could be better spent. Unfortunately for Cheney, this is the subject he is so passionate about.*

The subjects' statement suggests that he or she recalled the statements and even specific words (e.g., passionate), when responding to the question of why he or she would not vote for Cheney. The commentary influenced the individual to use this specific issue dimension as one of the main criteria in the candidate evaluation. The similarities between the specific statements made by the commentators and the subjects were found in many of the responses. Another example was found in the ABC condition. George Stephanopoulos discussed the way that Joe Lieberman looked into the camera. Subsequently, many of subjects' comments in that condition also discussed this physical action.

Hypothesis 4
Framing of Categories

The fourth hypothesis, which predicted that subjects would frame the issues, traits and performance of the candidates in the same way that the post-debate commentary framed these dimensions, was partially supported. Tables 5a presents the results of the frames analysis for the post-debate commentaries. Table 5b presents the results of the frames analysis for the subjects' open-ended responses in the four conditions. The positive numbers reflect support for Cheney while the negative numbers reflect support for Lieberman. Although the findings do not fully support a framing effect, they do provide important insight into the specific dimensions that dominated evaluations of each candidate. For example, on the one hand, the evaluations of the commentators as well as the subjects' evaluations in the *CBS*, *NBC* and debate only conditions tended to favor Cheney's performance in the debate. On the other hand, the evaluations of commentators and subjects in all of the conditions tended to favor Joseph Lieberman on the issues.

Hypothesis 5
Affect of News Verdicts on Strong Partisans

Hypothesis 5, which predicted that news verdicts would have little or no influence on strong partisans' vote choice, was supported. Table 6 presents the results of the comparison of pre and post vote choice among strong partisans. The Debate only condition shows a slight increase of support for Bush among strong Democrats, both Democrats most who altered their vote choice moved to undecided/other. The CBS condition shows no change in vote-choice. Surprisingly, however, one-third of subjects who called themselves strong republicans chose to vote for Gore in both the pre and post test. Bush lost support among strong Republicans in the NBC condition, but the vote choice went to other/undecided instead of to Gore. Gore's support did not change. While in the ABC condition, Democrats decreased their support for Gore, moving it to undecided/other. Republican support did not change in this condition.

Among strong partisans who chose to vote for Bush or Gore, Bush actually gained a percentage point, 36% in the pre-test to 37% in the post-test, while Gore lost a point, 64% to 63%. This shift is deceptive, however, because Bush only took one vote from Gore. The important difference is found in the fact that Bush lost thirty-percent (30%), or three supporters to undecided/other and Gore lost eighteen-percent (18%), or three voters, to undecided/other. So news verdicts may have an influence on strong partisans but that affect is not be strong enough to make them completely switch parties. Instead, it is more likely to turn them into undecided voters.

Discussion

This study had three limitations. First, the fact that subjects viewed a vice-presidential debate rather than a presidential debate could negatively influence their motivation to attend and learn. However, since the 2000 presidential campaign was a very close race, involvement might have been somewhat higher among individuals who do not typically vote. More importantly, while individuals might have obtained information about the presidential candidates, relatively less was known about the vice-presidential candidates. This, in turn, could have influenced subjects to pay more attention to the debate. The vice-presidential debate was chosen specifically due to the fact few people knew much about Lieberman or Cheney. These low levels of knowledge enabled us to examine what type of effects occur when individuals are in the process of learning about candidates. Additionally, if there was a lower level of interest among subjects, this would lead to more conservative results which serve as a more stringent test for predictions.

The second limitation is one that typically occurs when student subjects are used for research. While the findings are not generalizable, this particular age group is worthy of study because there tends to be a larger number of independent voters among its membership. Since independent voters comprise the majority of the "swing votes" candidates target during election campaigns, understanding salient criteria used in independent voters' candidate evaluations is beneficial both practically and empirically.

The third limitation of this study is the use of qualitative data that limited the researchers' ability to conduct inferential statistical analysis. However, qualitative data, such as the open-ended response provided by the subjects in this present study, has important advantages over close-ended responses. Specifically, open-ended responses enable researchers to examine the underlying justifications that comprise subjects' attitudes and decision rules. Although the systematic coding of the responses did not provide robust support for every hypothesis, the qualitative analysis clearly demonstrated examples of priming effects. The fact that subjects' used commentators' evaluations in their own judgments could have easily been overlooked by close-ended questions. Therefore, the qualitative data provides an important component to studies measuring priming and framing effects.

With these limitations in mind, the results still offer interesting insights regarding the influence of post-debate commentary on viewers. Specifically, although not conclusive, the findings lend support to the idea that post-debate commentary can have priming and framing effects. For example, the first two hypotheses that addressed the categorical effects of priming were supported by the data. After watching a debate, an individual might not be certain what issues, performance or trait dimensions are important. Additionally, the individual is bombarded with a great deal of information that he or she must somehow synthesize. Post-debate commentaries not only provide cues for viewers regarding the salience of different dimensions, but as the findings demonstrate, they also might influence the criteria that individuals use when evaluating candidates.

Although the findings support priming at the categorical level (e.g., issues, traits, performance) they provided ambiguous support at the dimensional level (e.g., specific issues, traits and debate performance criteria). For example, on the one hand the findings demonstrated that the focus on the military and foreign affairs during the debate as well as in the post-debate commentary when anchors reported the events in Yugoslavia could have primed subjects to evaluate the candidates on their foreign policy more than, for example, their stances on education. However, on the other hand, the findings also indicated that although very little was discussed regarding the candidates' positions on abortion, subjects used this dimension more frequently than other issues. While these results could be due to the fact that abortion is a sensitive subject that has always served as a source of differentiation between the two parties, they also reveal the effect that individual-level differences can have on the priming effect.

Although the findings regarding framing were only partially supported, they provided interesting insights into the weight that commentators and subjects' assigned to the different dimensions in their evaluations of the candidates. For example, both commentators and subjects tended to favor Cheney's performance more than Lieberman. This could be due to the fact that prior to the debate, relatively less was known about Cheney compared to Lieberman. Additionally, leading up to the debate, there was some skepticism expressed by the media regarding Cheney's ability to debate. Following the debate both the commentators and the subjects in this study expressed surprise over Cheney's performance. Although they did not discredit Lieberman's performance, this surprise might have influenced them to express more feelings toward Cheney.

The findings regarding framing also indicated that subjects tended to favor Lieberman on the issues. This was especially true with regard to abortion. In fact, many of subjects reported in their open-ended responses that although they felt Cheney performed well during the debate, his position on abortion made them favor Lieberman more.

Hagner and Rieselbach (1978) found that debates have little attitudinal or behavioral effects on strong partisans. However, there does seem to be a minor vote choice shift among strong partisans in this study. Strong Republican partisans were more likely to vote for the opposing candidate and stick with that vote. Harmful to the Gore ticket, if Democrats altered their vote they were more likely than Republicans to switch their vote to the opposing candidate. If Republicans altered their vote choice, they tended to switch to undecided/other, and a larger percentage of Republicans did switch to undecided/other. Since vote choice was forced, respondents did not have the option of claiming undecided in the pre-test. Therefore, subjects who changed their vote to undecided/other, may have only been leaning toward their parties candidate and not truly committed to him. If it's true that undecided voters are more strongly influenced by news verdicts, based on what was found here for strong partisans, it is possible the influence on undecided voters is extremely strong.

On the other hand, it is also possible that strong partisanship may not be an equivalent opposite for undecided. Or more possible still, that vote choice can't be measured correctly in this sort of low knowledge arena without a "undecided" choice. To clarify this question, an undecided category should be included when asking vote choice in future studies. Additionally, the small sample size and the age of the sample may have influenced results.

In general, the findings of this present study suggest that post-debate commentaries could have an important influence on the criteria voters use when evaluating candidates. This is especially true among voters who are undecided and/or nonpartisan ties and who have very little information about the candidates. Since debates often bombard individuals with a great deal of information in a relatively short period of time, the post-debate commentary can play an important role in the learning process among voters through priming and framing.

Appendix A

Tables

Table 1a: Categories x Collapsed Conditions

	TV Post-Debate Commentary	Open-Ended Responses Debate Plus Commentary Conditions	Open-Ended Responses Debate Only Condition
Issues	27%	37%	47%
Traits	19%	19%	18%
Perform	54%	44%	35%
TOTAL	100% (N=182)	100% (N=574)	100% (N=164)

Table 1b: Post-Debate Commentary -- Categories x Condition

	CBS	ABC	NBC
Issue	27%	9%	43%
Trait	15%	21%	21%
Performance	58%	70%	36%
TOTAL	100% (N=73)	100% (N=53)	100% (N=56)

Table 1c: Open-Ended Responses -- Categories x Condition

	CBS	ABC	NBC	Debate only
Issue	35%	31%	42%	47%
Trait	17%	22%	19%	18%
Performance	48%	47%	39%	35%
TOTAL	100% (N=210)	100% (N=215)	100% (N=234)	100% (N=164)

Table 2a: Post-Debate Commentary -- Specific Issue Evaluations x Condition

	CBS	ABC	NBC
Abortion	10%	--	--
Economy	10%	--	13%
Education	20%	--	13%
Environment	--	20%	--
Equality	15%	20%	8%
Military	5%	40%	21%
Social Programs	--	--	4%
Social Security	15%	--	17%
Taxes	10%	--	21%
Working Class	10%	--	--
General Issues	5%	20%	3%
TOTAL	100% (N=20)	100% (N=5)	100% (N=24)

Table 2b: Open-Ended Responses -- Specific Issue Evaluations x Condition

	Debate only	CBS	ABC	NBC
Abortion	22%	26%	24%	31%
Economy	1%	4%	3%	6%
Education	7%	6%	3%	6%
Environment	3%	6%	10%	10%
Equality	7%	22%	10%	4%
Military	21%	14%	24%	15%
Social Programs	3%	1%	2%	2%
Social Security	10%	6%	5%	4%
Taxes	13%	10%	12%	13%
Working Class	1%	3%	5%	2%
General Issues	12%	2%	2%	7%
TOTAL	100% (N=77)	100% (N=73)	100% (N=67)	100% (N=99)

Table 3a: Post-Debate Commentary -- Specific Trait Evaluations x Condition

	CBS	ABC	NBC
Cares	--	--	--
Charisma	18%	18%	--
Compassion	10%	--	--
Experience	36%	9%	33%
Humor	--	--	--
Intelligence	--	--	8%
Leadership	--	9%	17%
Morality	9%	18%	17%
Personable	9%	--	8%
Trustworthy	--	--	--
Vision	--	--	--
General Traits	18%	46%	17%
TOTAL	100% (N=11)	100% (N=11)	100% (N=12)

Table 3b: Open-Ended Responses -- Specific Trait Evaluations x Condition

	Debate Only	CBS	ABC	NBC
Cares	--	11%	6%	5%
Charisma	--	5%	--	1%
Compassion	7%	14%	6%	9%
Experience	28%	--	13%	23%
Humor	--	19%	2%	--
Intelligence	17%	3%	6%	5%
Leadership	--	8%	6%	21%
Morality	4%	3%	40%	12%
Personable	--	3%	4%	5%
Trustworthy	17%	16%	13%	5%
Vision	3%	11%	4%	12%
General Traits	24%	7%	--	2%
TOTAL	100% (N=29)	100% (N=37)	100% (47)	100% (43)

Table 4a: Post-Debate Commentary -- Specific Performance Evaluations x Condition

	CBS	ABC	NBC
Articulate	10%	5%	30%
Believable	10%	5%	10%
Composed	2%	11%	--
Engaging	17%	14%	--
Physical Action	5%	5%	5%
Straight Forward	24%	30%	30%
Well-briefed	10%	3%	--
Didn't Attack	14%	24%	25%
General Performance	8%	3%	--
TOTAL	100% (N=42)	100% (N=37)	100% (N=20)

Table 4b: Open-Ended Responses -- Specific Performance Evaluations x Condition

	Debate Only	CBS	ABC	NBC
Articulate	12%	14%	13%	13%
Believable	17%	18%	28%	17%
Composed	2%	7%	3%	13%
Engaging	31%	19%	18%	15%
Physical Action	3%	2%	11%	14%
Straight Forward	21%	20%	14%	15%
Well-briefed	9%	12%	12%	9%
Didn't Attack	--	5%	--	3%
General Perform.	5%	3%	1%	1%
TOTAL	100% (N=58)	100% (N=100)	100% (N=101)	100% (N=92)

Table 5a: Post-Debate Commentary Frames x Categories*

	CBS	ABC	NBC	Total Mentions
Issues	0	- 3	- 2	33
Traits	+5	- 1	+3	23
Performance	+3	+2	+4	39

* *(Negative signs = Pro Lieberman Statements; Positive signs = Pro-Cheney Statements)*

Table 5b: Open-Ended Response Frames x Categories*

	CBS	ABC	NBC	Debate Only	Total Mentions
Issues	- 31	- 19	- 59	- 17	316
Traits	- 9	- 19	- 5	+11	156
Performance	+46	- 5	+18	+30	351

* *(Negative signs = Pro Lieberman Statements; Positive signs = Pro-Cheney Statements)*

Table 6: Condition x Strong Partisanship x Pre and Post Vote Choice

		Bush Pre	Bush Post	Gore Pre	Gore Post
Debate Only	Strong Republican	3 100%	1 100%		
	Strong Democrat		1 25%	6 100%	3 75%
CBS	Strong Republican	4 66.7%	4 66.7%	2 33.3%	2 33.3%
	Strong Democrat			3 75%	3 75%
NBC	Strong Republican	2 100%	1 50%		
	Strong Democrat			5 83%	5 83%
ABC	Strong Republican	3 100%	3 100%		
	Strong Democrat			5 83.3%	4 66.70%
Total Votes		12	10	21	17
Percentage of Gore/Bush vote		12/33 36%	10/27 37%	21/33 64%	17/27 63%
Votes gained from opponent			1 10%		
Votes lost to undecided/other			3 30%		3 18%

Note: Percentages may not total 100 because respondents had the choice of voting for other candidates, although they were forced to make a vote choice.

Running Head: ONLINE NEWS HABIT

Use of Online News Sites:
Development of Habit and Automatic Procedural Processing

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Abstract

The "newspaper habit" is a U.S. cultural symbol, yet researchers of online media use are not sure how habits will develop and function online. This paper presents a theoretical perspective to examine habit and offers data from two surveys. Findings suggest that habit for online news may be more difficult to foster because habit appears less time-bound online, thus lessening the context stability for habit development.

Use of Online News Sites:

Development of Habit and Automatic Procedural Processing

Research reveals that 56 percent of the U.S. population is online (Jesdanun, 2001), and that 61 percent of U.S. home Internet users access the Web daily (Sefton, 2000). The UCLA Internet Report (UCLA Center for Communication Policy, 2000) found that 56.6 percent of surveyed Internet users read news online, making it the fourth most popular Web activity. In 1998, there were 2,859 newspapers online, 1,749 of which were U.S.-based (Peng, Tham, Xiaoming; 1999). The Newspaper Association of America (2000) reported that as of April 2000, "more than 1,200 daily newspapers have launched online services" and that worldwide there are more than 4,000 newspapers of all kinds online.

Traditional news producers worry that online news media will supplant print newspapers or television as the preferred news source for consumers. Research confirms that use of the Internet is encroaching on general TV viewing habits. A study by Arbitron and Edison Media Research indicated that among media consumers between the ages of 12-24, half preferred the Internet to television (Kornblum, 2001). However, this does not mean the consumers are going online for news on a regular basis.

A report released by the Pew Research Center (2000, n.p.) indicated that across media "growing numbers of Americans are losing the news habit." To support sales, print newspapers have generally relied on a group of core readers who have developed newspaper readership habits. Not just the traditional news media, but online media as well will need to foster habitual use of their news product. Although an online preference for news has developed, it doesn't appear that habitual use of local online newspapers has. Cyber Dialogue reported that although 49 percent of online U.S. adults visited a local newspaper site on a monthly basis, only 7 percent did so on a daily basis (Runett, 2000).

The purpose of this paper is to establish a theoretical framework to analyze the habits of online news consumers to determine how and when habituation may occur. To this end, this study reviews the literature on the conceptualization of habit and research pertaining to use of online information. This is followed with a discussion of how the media use literature relates to the literature of psychological procedural processes. Data from two surveys of respondents of local newspaper-affiliated sites are then examined to provide preliminary support for a conceptualization of habit. A synthesis of theoretical foundations is then presented together with suggestions for further research of online habit.

The understanding of habitual online news consumption has important implications for generating viable economic models for online media. This paper may help define what makes users "stick" or return to online news services. From a theoretical standpoint, understanding the automatic procedural processes related to online news consumption might aid researchers to understand and differentiate the semantic cognitive processing of online information.

Literature Review

Defining Habit

Philosophical Perspective. Although only nominally studied in mass media communications, the power of habit and ritual has a long history of intellectual investigation in the annals of philosophy, sociology and psychology.

In ancient times, the Greek philosopher Aristotle (384-322 BCE) wrote that habit – which he defined as "a quality of long duration and difficult to change" – can ease many of the discomforts of life. Concentration, hard study and intense effort are painful because they involve constraint and compulsion, he wrote. The pain melts away into pleasantness, Aristotle noted, when these burdens become habitual (Cooper, 1932).

Aristotle, Evenus, Publius and other classical thinkers ascribed positive power to habit. Hsieh argued that habit became the very backbone of Aristotle's pursuit of "virtue," citing the many references to habit in the Greek's famous book on virtue, *The Nicomachean Ehics* (Hseih, 1997). From that book comes one of Aristotle's oft-repeated quotes, "We are what we repeatedly do. Excellence then, is not an act, but a habit."

The terms "habit," "rite" and "ritual" have been used interchangeably by theorists over time. Most tend to agree, however, that the selection of a term depends on the degree, intent and timing of the action. Although most scholars agree that "rite" is most properly used to refer to a specific ritual activity, the distinction between habit and ritual is less clear. Durkheim, in his 1915 work *The Elementary Forms of Religious Life*, established the view that rituals are the mechanisms that produce ideas charged with social significance – a concept that retains import in the journals of sociology today (Collins, 1985; Durkheim, 1915).

Psychological Perspective. In the literature of social psychology, habits have been traditionally studied as simple reactive behaviors in a stimulus-response model, omitting the function of cognitive processing (Aarts & Dijksterhuis, 2000). More recent conceptual definitions of habit refer to it as an automatic process (Aarts & Dijksterhuis, 2000; Aarts, Verplanken, & van Knippenberg, 1998; Hay & Jacoby, 1996; Ouellette & Wood, 1998; Verplanken & Faes, 1999). In fact, Hay and Jacoby (1996) define habit as automatic processing. Aarts, Verplanken, & van Kippenberg (1998, p. 1358) acknowledged that "although habitual behaviors may not meet all criteria of automaticity, habits do comprise a goal-directed type of automaticity."[1]

Ouellette and Woods (1998, p. 55), who conducted a meta-analysis of over 55 studies related to habit, defined habit as "behavioral tendencies." They also noted that "Habitual responses are likely to occur with minimal thought and effort to the extent that contextual features integral to performing the response and one's behavioral goals are similar across time and setting." Verplanken and Faes (1999, p. 594) examined healthful behaviors, and defined habit as "behavioral response to specific cues in the environment." They differentiated habit from deliberate planning by suggesting that "habits form through [satisfactory] repetition of past behavior (p. 594)."

Aarts and Dijksterhuis (2000, p. 53), who studied travel mode choices, defined habit as "a function of relative frequency of past performance." Aarts et al. (1998) noted other characteristics of cognitive representations of procedural habit: "habit leads to increased focus on the habitually chosen option (p. 1365)," and "the recurrence of the behavior is contingent on the opportunity to perform that behavior under similar if not identical circumstances (p. 1369)." Hay and Jacoby (1996) demonstrated that habits can become so ingrained that they can lead to performance errors ("memory slips"). An example of this would be to follow your typical route home from the office, when you had actually planned to go in a different direction to pick up milk from the store.

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[1] Bargh and Chartrand (1999) addressed the conceptualization of what is considered "automatic processing." According to Bargh and Chartrand (1999, p. 463), the term *automatic* has been applied to "research on skill acquisition focused on intentional, goal-directed processes that become more efficient over time and practice until they operate without conscious guidance." They noted it is also used in "research on the initial perceptual analysis or encoding of environmental events (called 'preattentive' or 'preconcious' processing) showed much of this analysis takes place not only effortlessly, but without any intention or often awareness that it was taking place (pp. 463-464)." In this study we are interested in the first definition of automatic processing, or automaticity.

These definitions, backed by experimental research, demonstrate that procedural habit (opening the door to pick up the newspaper to read it while eating breakfast; driving to and from the office; brushing one's teeth; or cueing up the computer to read the day's news on one's Web browser) becomes automatic through satisfactory repetition of a goal-directed activity in a familiar, stable context. Habit is distinguished from conscious, more active mental processing such as semantic processing (reading and thinking about news information). The implementation of habitual behavior requires reliance on familiar cues that enable people to conserve time and mental effort.

Traditional Media Use and Habit. Early conceptualizations of news habit used definitions from behavioral psychology and do not differ from some of the definitions used today. Stone and Werthington (1979, p. 554) defined habit as "behavior that tends to be repeated regularly in just about the same way." They found that newspaper reading habits were tied to reading news at a particular time, place and the newspaper reading patterns of one's parents. Stone and Windhauser (1983) examined readers of morning and afternoon newspapers and found differences in the type of content preferred by the two groups. Bentley (2000b) found that perceived importance of newspaper reading was associated with ritual use of the newspaper.

Gantz, Fitzmaurice and Fink (1991), while studying newspaper, news magazine and TV information-seeking behaviors, found that individuals used their regularly relied-upon media for information-seeking rather than going elsewhere. The authors suggested that "regular users know where to find particular news items and easily know, on the basis of presentation codes used (e.g., amount of time and space allocated to the story, reporter assigned to it) how much importance to attach to it (p. 637)."

Woodall, Davis and Sahin (1983, p. 12) in studying information-processing of television viewers noted that "...stories that deal with matters familiar to most viewers will be well understood because viewers can rely on a well represented network of [semantic memory] nodes acquired through daily experience." This suggests that not only does context stability (location, time and complementary behaviors or tasks) influence habits, but memory of the familiar visual and contextual cues support habit formation.

Barnhurst and Wartella (1991) found a decline in newspaper readership and a rise in television popularity among college students. Their study found a lingering appreciation for newspapers and a begrudging acknowledgment of newspaper use by young people. It was read, but also performed a variety of non-news functions – a source of art projects, a focus for family time, an object of entertainment. Nevertheless, as they aged, many of these young people formed strong opinions about the value of newspaper reading, associating it with "quality" or "education."

Rosenstein and Grant (1997) found that weekend television viewing was best predicted by watching TV the previous hour and viewing at the same hour during the week. The results of this study suggest that a goal-driven habit, watching a particular show, may influence subsequent viewing even if there was no conscious intention to watch the particular program that followed.

Online News Consumption and Online Behavior

Research in the area of online journalism has focused on how people use media Web sites (Aikat, 1998; Eveland & Dunwoody, 2000; Fredin, 1997; Fredin & David, 1998; Lewenstein, 2000; Light, 1999; Stempel & Hardgrove, 1996; Sundar, 1998; Sundar, 1999), the availability of interactivity online (Aoki, 2000; Light & Rogers, 1999; Schultz, 2000) and content of news sites (Schultz, 1999).

Several studies have examined media use and the role new media play in consumer media consumption. Stempel and Hargrove (1996, p. 556) found that "regardless of medium, regular use increases with age." The authors also found that computer media use was associated with users who had higher education levels and income. The Pew Center for Research (2000) confirmed the latter finding, but adds that the Internet has supplanted network TV news as a greater news source for college graduates under the age of 50. The Newspaper Association of America (2000) found similar results. The NAA reported that the percentage of 18 –34 year olds who use the Internet for news four to five times a week nearly tripled in the last three years. At the same time, the percentage reading daily newspapers and watching local television news declined.

On the other hand, Althaus and Tewksbury (2000) found that Web surveillance by university students substituted for entertainment television viewing, but not for newspaper reading nor for television news viewing. They also indicated that print newspaper readers were more frequent online news seekers and used online media to supplement information acquired from newspapers. This suggests experience, or past behavior with a medium influences future behaviors and habits.

However, Aikat documented many of the most frequent activities of online newspaper readers by analyzing the user logs of Knight Ridder's Philadelphia Online (Aikat, 1998). In this single case study, Aikat found that time spent online reading news was brief, occurred more on weekends and was increasing. The average visit was less than 14 minutes in 1997, up from under 10 minutes in 1996. During the short time users did visit, they visited about seven Web pages, which Aikat attributed to browsing rather than in-depth reading.

Lewenstein (2000) used computer-assisted Eyetrack technology to examine the physical habits of online readers, noting that text is more attractive than graphics and even banner ads outdraw informational graphics. European research indicates that even people who complain about reading news online soon get used to it and learn to navigate through the Web proficiently (van Oostendorp & van Nimwegen, 1998).

Fredin and David (1998) showed that user Web browsing cycles were affected by the perceived efficacy of achieving goals and by the level of curiosity and surprise the site elicited from the user. The authors suggested that when user expectations are violated, it may cause them to process messages more carefully and arouse their interest providing motivation for continued information-seeking behavior.

Fredin (1997, p. 5) noted that curiosity "involves figuring something out" and is linked to motivation as well as thought and affect. The interaction between efficacy, curiosity and motivation all affect the type of goal that is set. Goal-seeking is the motivation for information-seeking behavior. How the user goes about attaining the goal is influenced by the users' past behavior and experience that is represented by the interaction between schema (memory), context stability and environment familiarity. How the goal is processed is then dependent on this interaction.

Comparing newspaper habit and online news habits may be difficult and the two may be cognitively processed dissimilarly. Eveland and Dunwoody (2000), in their think aloud study of information processing of Web site information, suggested that information sought from online is processed differently because the medium is nonlinear. Compared to print media and TV news, online users do not need to follow a particular ordered sequence for information. Eveland and Dunwoody's results showed that the majority of respondents' thoughts were spent on orientation, or "attempts to understand the content and structure of the information space (p. 229)." This suggests that online, familiarity with Web design and structure provided context stability required for habit formation. These authors also suggested that because a majority of the users' thoughts were spent on orientation, it may leave little time for elaboration of thoughts, or learning.

Light (1999) also used a think aloud protocol to examine fourteen users' expectations of three online news sites and found that the expectations were tied to how the users regarded the medium offline (newspaper, television or pure Internet site). She also observed that behavior fluctuated between evaluating site content and browsing issues of interest. Similar to Eveland and Dunwoody (2000), she found that some users spent time orienting to the site structure. She also noted that participants described what they expected behind a link without further investigating whether they were correct. She noticed there was considerable prejudging of content. One browser in her study noted, "I'm importing my reading habits—except when I'm searching when I expect to get information—otherwise when I'm browsing I let my prejudices have full sway [n.p.]." Light also found that log files showed that 80 percent of visitors visited the site only once – indicating they were deliberative and goal-oriented. Other pertinent findings from Light's study were that reading is more difficult on the monitor, and many other things on the screen compete for attention.

Sundar (1999) examined whether news seekers perceive news stories differently online than in print. Respondents judged the stories according to 21 descriptors, which were factor analyzed and loaded onto four factors – credibility, liking, quality, and representativeness– for both mediums. Overall, participants judged stories similarly regardless of medium. Exceptions were for the terms "accurate" and "believable." For print respondents the items loaded on the factor of "quality." For the online story respondents, the items did not load on any particular factor, but were spread across "credibility," "liking" and "representativeness." Sundar (p. 383) argues the study "makes the case for the existence of news perception *independent* of source perception." Judgments by participants may also suggest that there is an expectation (requirement) for print news to be accurate and believable, therefore the terms loaded with quality. Online, however, there may not be such rigid expectations, and the terms loaded on factors related more to preference than a requirement. Findings from a related study (Sundar, 1998) show that source attribution is important for higher "credibility" and "quality" ratings of online news stories also suggesting a preference and strong expectation.

Much has been said about the "interactivity" of the Web, but not all agree on its definition. Interactivity may relate to Fredin and David's (1998) concept of surprise and curiosity. Schultz (1999) considered the availability of interactive tools in online U.S. newspapers as signs of interactivity. These tools included posted e-mail addresses on the news Web site, live chats, online polls and surveys, online forums, and bulletin boards. Rafaeli and Sudweeks (1997) examined interactivity in populations of Bitnet, Usenet, and Compuserve groups and presented the following: "Interactivity describes and prescribes the manner in which conversational interaction as an iterative process leads to jointly produced meaning. Interactivity merges *speaking* with *listening* (n.p.)"

Aoki (2000) defined interactivity as *interacting with the Web* and *interacting through the Web*. Interacting *with* the Web concedes control to the users with "the user's ability to interact with Web Servers or its databases through hyperlinks embedded in a Web page, search engines, and multimedia capabilities (p. 3)." When a Web user interacts with other Web users or the content publisher or provider Aoki considered this interacting *through* the Web. Aoki described this as interaction through the use of "e-mail links, message boards or discussion forums, chat rooms, Web telephone, and video conferencing (p. 3)."

Morris & Ogan (1996) pointed out that the Internet also allows the audience member to become a producer of messages, an option not offered as readily by traditional mass media. This allows the Web user to "push" information, possible in the context of a newspaper forum, or sending reporters e-mail messages. Schultz (1999) conducted a content analysis of 100 U.S. newspapers and observed that on a scale of zero-15 on interactivity, the mean score for all newspapers examined was 4.1. Peng et al. (1999) conducted a content analysis of 80 newspapers and also found that one-third offered readers the chance to interact with newspaper staff or other readers through online forums or live chats. Thus, opportunity to develop habits on newspaper Web sites may be limited.

Elements of the definition of habit from cognitive psychology can be combined with findings from media use studies of habit. For our purpose, we discuss habit similarly to Aarts & Dijksterhuis (2000), as *a primed cognitive representation that is automatically activated and motivates an individual to perform a goal-driven behavior.* Habit is a process with both cognitive and behavioral components. The goal-driven behavior is seeking news from a media-sponsored Web site. The strength of the habit is conceptualized as the frequency in which the habitual behavior is invoked. Important requirements for habit are previous implementation of goal, familiarity, efficacy, stability of context (structure) and satisfaction.[2]

In an online news environment, previous implementation of a goal would mean prior experience with the Web site. Familiarity refers to knowledge of the Web site structure, and efficacy pertains to the confidence with which the user feels he or she can navigate the site or perform the steps necessary to interact with components of the site. Stability of context represents change in the Web site structure or site location, and the linearity and number of layers a reader might have to move through. Interactivity requires more conscious thought and effort, but could develop into an automatic skill. Interest and curiosity may have more to do with the formation of a habit, whereas satisfaction relates to habit maintenance and the development of positive affect.

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[2] Habit also involves affective components, as previously noted in the discussion of Aristotle's view. We believe affect is related to the satisfaction derived from the habitual behavior leading to its repetition (if positive).

Online Habit in the Context of Audience Activity Theories

Rather than fitting one specific audience activity theory, online behavior probably uses a combination of both a media dependency perspective and a uses and gratifications perspective. Negroponte (1995) asserted that traditional media outlets have historically "pushed" information or stories to readers and that new media will need to reconsider its role. He noted that the structure of the Web environment provided media users opportunities to "pull" and customize information changing the landscape for how media can provide information.

The idea of "pushing" and "pulling" information allows for viewing media dependency as the "push" portion of providing information online (e.g., providing customized news e-mail updates, or simply the selection of stories positioned on the main news page), and the uses and gratifications approach follows the idea of users "pulling" information from online based on their needs (e.g., the keyword search function on news sites). In an examination of implication of the Internet for psychology, McKenna and Bargh (2000, p. 59) noted that a uses and gratifications approach applies to Internet effects studies because, "How a person is affected by a given communications medium depends on that person's reasons and goals for using the medium." Although McKenna and Bargh depict the user as actively in control, this could also pertain to a dependency model because attaining user goals is based on information provided by the news sites and the relative power the user has in selection of information. Distinguishing these two theories from each other allows for a better understanding of how the theories relate to the concept of online habitual behavior.

Media systems dependency theory. One of the fundamental differences between the uses and gratifications approach and the media system dependency theory (MSD) is that MSD research (Loges & Ball-Rokeach, 1993, p. 603) "characterizes the audience member's relation to the media as one of inherent subordination." MSD, unlike uses and gratifications theory, concentrates research questions on the asymmetry of power between media systems and the consumer. Ball-Rokeach (1985, p. 487) defined mass-media system dependency as a relationship in which "the capacity of individuals to attain their goals is contingent upon the information resources of the media system. Those resources are capacities to (a) create and gather, (b) process, and (c) disseminate information."

Media system dependency is conceptualized as interrelated with societal, economic and political systems and can be conceptualized as examining micro- or macro-levels of analysis. The model further assumes that "individual's motives for media exposure concern both self-maintenance and selfgrowth" (Ball-Rokeach, 1985, p. 495). Ball-Rokeach (1985) also suggested that perceived efficacy and unstable environments can affect media dependencies. Becker and Whitney (1980) explained that dependency on media in general differs by individual and that individuals differ with respect to dependency on particular news mediums. Their findings suggested that media dependency on a particular medium could shape one's knowledge of public affairs, comprehension and trust.

In MSD theory, habit is to viewed as a form of selectivity that is affected by environmental factors. MSD recognizes the changing nature of habitual behaviors due to available resources or outside influences. However, MSD places habit as antecedent to personal goals as simply a consumption characteristic rather than a means to achieve a goal (Ball-Rokeach, 1998). This appears to present habit as preceding personal goals and diminishes its role in media use.

However, the MSD perspective can be applied to the habitual process of using an online news site. For example, as a newspaper-affiliated Web site user becomes familiar with the site structure and uses the site, the user is restricted in some sense by the information provided by the site. Also, on the Internet where some publications are tightly focused on particular niche markets, the Web publications may be the only locations where information sought can be found. The availability of the site would depend on the economic (and perhaps political) structure. Hence, the Web site user is dependent on the availability of the news product. Newspaper-affiliated Web site users, however, are able to choose or search other Web sites and are given control in many cases over when and how they will receive the news information. This allows the Web site user partial control over his or her use interaction.

Behavioral patterns associated with media dependency can account for habitual use of the media, and newspaper-affiliated Web sites in particular, if environmental factors are stable. As noted earlier—context stability is a very important factor in habit formation. If a user has a dependency relationship with a particular site, it will probably manifest in habitually going to that site for specific information. The uses and gratifications approach can also lead to habitual behavior if the gratifications or goals for media use behavior are met. Habit, then, can be associated both with media dependency and media use.

Uses and Gratifications. In contrast to the MSD theory, uses and gratifications theory (Levy & Windahl, 1984, pp. 51-52) assumes that "conditioned by social psychological structures and within the constraints of available communications, individuals choose what communications to enter." The authors divide media use into three temporal categories: before exposure, during exposure and after exposure. They further break audience activity into three separate categories: selection, involvement and use.

The model assumes that "people select and use communication sources and messages to satisfy felt needs or desires (Rubin, 1993, p. 98)." Individual choice of media and situational contexts are perceived to influence motivations, goals and outcomes. This theory also addresses media use as ritual or habit. Matching the psychology literature, uses and gratifications theory implies that ritual or habitual use of media requires less involvement (Rubin, 1993). Ruggiero (2000, p. 10) noted that uses & gratifications theory implies intention and selectivity, which is divorced from habitual behavior—but can lead to habit formation.

Rubin has addressed the role habit plays in audience activity defining the habitual viewer as one that "watches to fill time and for companionship, relaxation, arousal, escape, views a great deal of television, and displays a definite affinity with the medium (p. 68)." What Rubin describes are outcome goals that may be linked to the cognitive representation of a habit. Although there is a definite "pull" to online, the problem with the conceptualization of habit from a pure uses and gratifications perspective is that habit, a goal-directed behavioral and cognitive process, is misrepresented as simply a motivation for the behavior. From the review of literature from psychology, it is clear that habit is not a motivation, but that motivation primed by a goal is part of the process of habitual behavior.

Rosenstein and Grant (1997, p. 327) criticized the treatment of habit from a uses and gratifications perspective stating "Within this model (U&G), habit is generally treated (if it is conceptualized at all) as one of several competing and co-equal motivations for media use." Redefining habit's role in uses and gratifications research from a social psychology perspective requires conceptualization of habit as a goal-directed behavioral process with many different underlying motivations (goals). This perspective, however, provides researchers a way to conceive of the "pull" nature of online media use, and the dependency perspective allows for understanding of the "push" perspective—with all the richness of their theoretical underpinnings.

Surveys of Online News Habit

Online Survey

To determine whether online news habit functions similarly to newspaper habit, a pilot study was conducted to see if time of day, location of access, or complementary activities were associated with who visited the site at least once per week. The online survey was posted on the Web on April 18, 2000, and ran for 10 days.[3] The survey was attached to a sidebar on the main page of a large Midwestern newspaper-affiliated Web site.

The survey sample was self-selected and purposive. No incentives were offered for participation. Participants were told they could quit at any time and that their responses would remain confidential.

The survey contained questions that primarily addressed user behavior while on the news site, attitudes about the news organization, and attitudes about presidential politics. Three questions related to habitual online news behaviors.

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[3] The survey was inaccessible for approximately six hours on April 21 due to site maintenance, and for three hours on April 24.

Buchanan and Smith (1999) have argued that Web samples can be as representative or more representative than traditionally collected samples because of the heterogeneity of the online population (versus student samples often used in psychology research). The authors also point out that posting surveys to Web sites may be more effective than e-mail surveys and may be relatively on par with paper-and-pencil tests. In addition, Locke and Gilbert (1995, p. 261) found that both computer-based questionnaires and paper questionnaires administered to groups of 10-20 people increased the amount of self-disclosure by the respondents and indicate "assessment formats minimizing social context information increase self-disclosure of socially undesirable material."

Although, admittedly, there are inherent problems in controlling who responds to Web-based surveys, in this survey control was taken to minimize error. Although the posted survey allowed users to complete the survey multiple times if the participant chose to do so, control for cases where there were multiple submissions was handled in the data analysis. Data were collected from the respondent's computer, identifying the computer's unique Internet address (ISP number) and the date and time of the survey submission.[4] This allowed for the elimination of all but the first completed questionnaire response from the same computer address. This technique has been used successfully in previous Web-based research (Buchanan & Smith, 1999). In addition, the survey was rather lengthy (11 Web screens) taking approximately 15-20 minutes to complete. It was unlikely that respondents would desire to complete the survey multiple times. There were few multiple entries.

The questions about habit were only asked of those respondents who indicated they visited the Web site at least once a week. This was done in order to screen out respondents who did not get their news from the site.

Electronic newspaper habit. The three questions related to habit were based on Bentley's (2000b) study. Bentley's index of newspaper habit items had an acceptable Cronbach's alpha level of .62. The habit questions were: *Do any of the following statements describe how you use a newspaper-affiliated online news service?* This question was then followed by three statements: *I usually access it at the same time each day. I usually access it from the same physical location each time. I usually read it while conducting the same activity, such as eating breakfast or upon arriving at work.* Possible responses to the above questions were either *Yes* or *No*. The term "newspaper-affiliated online news service" was carefully chosen, as newspapers are trying to move away from the perception they only offer an online version of the printed paper.

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[4] Note: Identifying the computer the respondent used does not necessarily equate to identifying the actual computer user. Computers in the public domain (e.g., at universities or libraries) may be used by multiple users. By eliminating multiple submissions from the same computer we may perhaps eliminate a legitimate survey respondent. However, as Buchanan and Smith (1999) suggest, it is best to take a conservative approach.

Results. Of those who responded to the survey, 79% said they accessed the news site from the same physical location (N=362). Approximately 44% did access the site while eating or upon arriving at work (N=360). These figures are similar to those found by Bentley (2000b) regarding the newspaper habit. The third item, however, differed. Of those who responded, only 36% said they accessed the site at the same time of day (N=361). Reading the newspaper at a certain time of day has strongly been associated with the conceptualization of newspaper habit (Stone & Wetherington, 1979; Stone & Windhauser, 1983). Although the results here are not generalizable, it is quite interesting that in the online environment of this particular newspaper-affiliated news service, a core concept of what has been used to define newspaper habit—time of day—appears to be very weak. However, the link between physical location and online news reading appears quite high.

Telephone Survey

A follow up survey was conducted to compare the nonrandomized sample of respondents to a sample that was randomly selected from a large metropolitan area in the Midwest (located in the same area as the online-newspaper affiliated service). A statewide telephone survey, using the random-digit dialing technique, was conducted March 10 - August 2000 by a professional research center. The response rate was 50 percent. A total of 587 interviews was completed, and of those 291 reported having access to the Internet. Of the 291, 111 reported accessing electronic newspapers, or the "World Wide Web version of a newspaper that is also available in paper format."

Electronic newspaper habit. The telephone version of the habit questions were a little different. Instead of using "newspaper-affiliated online service," the term "electronic newspaper" was used. The respondent was asked *Please tell me if any of the following statements describe how you use an electronic newspaper:* (1) *When I read an electronic newspaper, I usually access it at the same time each day,* (2) *When I read an electronic newspaper, I usually access it from the same physical location each time,* (3) *I usually read my electronic newspaper while conducting the same activity, such as eating breakfast or on arriving at work.* Possible responses to the above questions were either *Yes* or *No.*

Results. *Demographics.* Of the subsample of those who had Internet access, those who reported reading electronic newspapers (e-papers) were more often male, younger and more educated. E-paper readers also reported slightly higher incomes, but overall only 12.4% reported earning less than $25K a year. A comparison of demographics from the online survey and the telephone survey were very similar, and also closely matched a national survey of local news users (See Appendix, Table 2).

Internet usage. Few e-paper readers were new to the Web. Only 5.4% of e-paper readers had been online for less than 1 year or about one year (6.3%). Most respondents reported having access for 2-4 years (53.1%), or 5-7 years (27%).

Seventy-one percent of e-paper readers reported usually accessing the Internet from home for news, while 14% reported work as their usual log on point. Patterns related to when respondents were more likely to access the Internet for news information shows that they're most likely online in the evening (27%) or access the Web sporadically throughout the day (26%). It is noteworthy that they reported that it is more likely they will sporadically check for news throughout the day rather than access it consistently in the morning, at midday, or at night.

Habit. Of those who responded that ever access e-papers (N=111), 81% said they accessed the news site from the same physical location. Approximately 31.5% did access the site while conducting activities such as eating or upon arriving at work. However, only 24.3% said they accessed the site at the same time of day. This mirrors earlier findings from the larger online sample.

Results

Table 1 (Appendix) shows the results across the two surveys. Examination of demographics (Table 2) shows that the online nonrandom sample reported higher levels of education. Comparisons of the two samples on mean age and sex are similar. Responses to the habit questions across surveys are also comparable. Only 36% of the online sample and 24% of random telephone survey respondents, reported reading an e-paper or newspaper-affiliated online service at the same time each day. In addition, 26% of telephone survey respondents reported accessing news information on the Web sporadically throughout the day. According to the literature on habit formation (Aarts & Dijksterhuis, 2000), stability of the environment or context is necessary for habit formation. If Web users are not seeking news information at the same time each day, it indicates that the context may be less stable, and make the process of habit formation more difficult. This is a departure from the notion of a newspaper habit, which measured readers by whether they read in the morning or evening (Stone, & Windhauser, 1983). This may also be complicated by the fact that Web browsing is nonlinear (Eveland & Dunwoody, 2000) and requires orientation behaviors (Eveland & Dunwoody, 2000; Light, 1999).

Although time of day may not provide the stability for habit formation, it does appear that close to 80% of respondents from both the online and telephone surveys indicated they accessed an e-paper or newspaper-affiliated online service from the same physical location. Using the Internet from the same location would add to the context stability. If people are using the same computers, they may be able to use bookmarks, home page customization, and other features that help to make the context stable. The number of people who access the Web from the same location, however, may decrease if mobile electronic devices are designed for easy access to news information.

Lastly, about one-third of the telephone survey respondents and a little under half of the online survey respondents indicated they accessed an e-paper or newspaper-affiliated online service while conducting the same activity. Perhaps the best indicator of the development of e-paper habit is discerning what similar activities are associated with e-paper reading. For print newspapers, relaxing while eating breakfast in the morning was closely associated with a morning newspaper habit (Bentley, 2000b).

Perhaps there are similar emotional states and associative behaviors that can be associated with online newspaper or news seeking habit.

The telephone survey suggests that sporadically accessing news sites throughout the day is common for one-fourth of e-paper readers. This may suggest that frequency of access to news information throughout the day would be a better indicator of online habit.

Conceptual Summary and Implications

Here, mass media theoretical approaches have been combined with the literature of cognitive processing to suggest that as media researchers, automatic procedural processes, or habits, deserve our utmost attention. Aarts and Dijksterhuis (2000) showed that habits were cognitive representations of goals that are automatically activated when primed (either intrinsically or extrinsically). Habit is the connection between the online user and the online user's mental representation of his or her goal. Expectations of satisfaction with goal outcomes also play a factor in online habit.

The literature suggests that in habit formation, the user will access schema memory traces, or mental representations of what the user has done in similar past situations. Schemata, according to Anderson (1984), are mental networks of interrelated ideas that are stored in one's memory and accessed when part of the network is activated. The strength of the mental network is dependent on the familiarity and stability of context. Schemata can refer to objects or events. Particular schemata (Anderson, 1984, p. 132) called scripts "can encode knowledge about stereotypical events." The process of going online for news could be linked to its associative behaviors and the frequency of behavior. Identifying these behaviors requires further research.

Ouellette and Wood (1998) found that past behavior (represented by the user's schema) combined with stable contexts (stability) and familiar situations (familiarity), lead to automatic or habitual behavior. This process is then related to the formation of habit strength. How habit is formed is a result of the interaction among schema, familiarity and stability and how this interaction affects how the goal is mentally processed -- automatically (habit) or consciously (planning).

Gantz et al. (1991) found that media users typically relied on their usual media source when engaged in information-seeking. This suggests that in an online media environment the goal driven information-seeking behavior in a familiar, stable context can lead to activation of habits. When contexts are unstable and unfamiliar, the individual will invoke conscious planning. Conscious planning indicates that habit has not yet been formed (Aarts and Dijksterhuis, 2000). Conscious planning (intent) can, however, eventually lead to habit formation if the goals are met satisfactorily, the goal is recurring, and there is stability and familiarity within the context. An example of this is the creation of a customized Web portal browser. Customizing the browser takes some thought, but once completed, the context is quite stable. In a dynamic online environment where user options or Web page designs change often, a user might find it difficult to develop user habits when the environment is fluid. The user may find that learning to familiarize oneself to the new environment (orienting oneself) does not provide the level of satisfaction desired for the outcome goal and will not repeat the behavior.

The outcome goals of habits are measured by level of satisfaction, which will be kept in memory for the next online use. Invoking the memory may trigger automatic behavior in the next online use cycle or lead to more conscious planning about how best to reach the goal. If goals are automatically acted upon, it indicates a habit. And the frequency or degree of its use distinguishes its strength. Aarts and Dijksterhuis (2000, p. 60) suggest, "The more frequently one engages in a certain goal directed behavior in similar situations, the stronger the association becomes and hence, the easier it is to automatically elicit the behavior by enacting the goal." Habits that are invoked more frequently are expected to be stronger.[1] If habits do not adequately meet expectations, the habit may dissipate.

The data presented here suggest that physical location and associative behaviors are linked with online news reading. However, time of day as associated with regular print news reading was not identified with online news reading. These findings complement other research about the nonlinearity of information-seeking online (Eveland & Dunwoody, 2000) suggesting lack of context stability. It appears there seems to be little consistency in time online news is sought. Also, if users are simply shifting offline reading patterns to an online environment, as suggested by Light (1999), then graphic structural forms of interactivity (distracting and changing graphics, etc.) online may not improve ease of reading and may require conscious planning not associated with habitual procedural processing. We do concede that people may read the local online news from the same physical location, not necessarily out of habit, but because the computer they are using is tied to a phone jack in the wall or DSL cable outlet whereby they have no choice. As computer become more mobile, this may not continue to be the case. The connections among locations and habit and habit's associative behaviors require further exploration.

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[1] Although not considered in-depth here, it is also hypothesized that habits derived from goals linked to one's self-concept would be stronger than goals not linked to self-identity or self-concept.

Conclusion

Online newspaper-affiliated news services must build secure user bases in order to survive financially. Part of the success plan of any periodical is persuading readers to incorporate the periodical into their regular routine – to build a reading habit. The issues described in this paper demonstrate that habit building for online news readers is no simple task. The exploratory research reported here indicates that news consumers use print media and online media in different ways.

The question for future research is, what are the factors that will increase habitual online e-paper Web site use? Web news consumers tend to "surf" through the news in a quick, perfunctory manner that lends itself less easily to habit creation. Web news consumers spend about a halfminute per day reading the news online, while newspaper readers average 25 minutes per day (Piller, 2000). A recent report by Jupiter Communications (Sinnreich, Romano, Lewis, Card, & Johnson, 2000) shows that online portal users seek news more often from general-purpose portals (like Yahoo!) than news specific portals.

Although there are general limitations to generalizability of the two pretests presented here, consistent results across the studies indicate the need for more research with special oversampling of online news consumers. Further study of online habit might examine whether seeking news information from newspaper-affiliated Web sites is associated with other online habitual behaviors (such as checking e-mail), how nonlinearity and interactivity affect procedural processes, and how specifying a time for online activity would increase online news audiences.

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Appendix

Table 1
Percentages[1] of Responses for Habit Across Two Online Samples and One Print Newspaper Sample

	Online (*E-paper*)		Telephone (*E-paper*)		Bentley's[2] Telephone (Print)	
	Nonrandom		Random		Random	
N	360-3		111		323-325	
When I read an (electronic) newspaper, I usually access it at the same time each day.	No	64%	No	75%	No	39%
	Yes	36%	Yes	24%	Yes	61%
When I read an electronic newspaper, I usually access it from the same physical location.	No	21%	No	18%	No	27%
	Yes	79%	Yes	81%	Yes	73%
I usually read my electronic newspaper while conducting the same activity, such as eating breakfast or on arriving at work.	No	55%	No	68%	No	60%
	Yes	44%	Yes	32%	Yes	40%
Chronbach's Alpha				.56		.62

Table 2
Sample Demographics

	Online (*E-paper*)	Telephone (*E-paper*)	Nationwide[3]	State
Median Age	44.0	39.0	39	33.6[4]
Sex	64% Male 36% Female	60% Male 40% Female	51% Male 49% Female	48.4% Male[5] 51.5% Female
Education	4% High School Grad 22% Some College 30% College Degree 16% Some Grad Sch. 28% Graduate Degree	13% High School Grad 17% Some College, ND 41% College Degree 8% Some Grad Sch. 20% Graduate Degree	49% College Degree	N/A

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[1] Percentages are rounded.

[2] From Bentley (2000b).

[3] Cyber Dialogue figures based on 1,000 adult online users in the United States (Runett, 2000).

[4] Missouri State Census Data Center: Basic Demographic Trend Report 1990, available http://www.oseda.missouri.edu/mscdc/census/us/trend/states/S29MO

[5] 7/1/99 population estimates, available http://mcdc.missouri.edu/trends/tables/moage99.html

Presidential Agenda Setting: A Pilot Study on the Weekly Radio Addresses and Media Coverage of Foreign Policy

A paper presented to the Communication Theory & Methodology Division at the Association for Education in Journalism and Mass Communication annual conference on Aug. 8, 2001, in Washington, D.C.

Abstract: This pilot study examines how presidents influence the media agenda with their weekly radio addresses and if their ability is enhanced when discussing foreign policy or when the nation faces a foreign-policy crisis as defined by international relations scholars. The radio addresses by Presidents Reagan and Clinton, as well as coverage in *The New York Times*, were examined for 1983 and 1993. Reagan was more successful than Clinton at attracting next-day news coverage, and neither used the radio addresses to discuss a foreign-policy crisis.

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Presidential Agenda Setting: The Weekly Radio Addresses and Foreign Policy

In U.S. foreign policy, the president is presumed to be the pre-eminent player (Kegley and Wittkopf, 1996). He is the commander in chief of the armed forces. He has been given the authority to appoint ambassadors, negotiate treaties and generally represent the United States abroad. "Authority also derived from the ability of the president to act assertively and decisively in the crisis-ridden atmosphere of the post-World War II period" (Kegley and Wittkopf, p. 341). In fact, crisis or no crisis, foreign affairs or domestic affairs, the president is considered to be the No. 1 newsmaker in the United States (Severin and Tankard, 1992, p. 216).

In terms of agenda-setting theory, then, the president should be in a privileged position to help set the media agenda. Particularly in the realm of foreign policy and even more so during a national crisis, one might expect what the president says to be judged newsworthy by the media and subsequently reported. The question to be examined here is to what extent the president influences the media agenda with his weekly radio address, a routine event as opposed to more significant speeches, such as the annual State of the Union address. Furthermore, is the president's ability enhanced when he is discussing foreign policy or when the nation is involved in a military crisis?

Although several studies have examined presidents' relations with the press during crises (see, for example, Winfield, 1992; Smolla, 1992; and Kern, Levering and Levering, 1983), few quantitative studies have focused directly on foreign policy and agenda setting. One exception was Wood and Peake (1998). They found that television attention to three enduring foreign-policy issues in the 1980s and 1990s affected how often the president addressed an issue in a speech, but not vice versa. Another study found that a president may influence television coverage of issues, such as international crises, if he is an important news source (Wanta and Foote, 1994). Other studies examined presidents' ability to set the media's agenda with their

State of the Union addresses and came up with contradictory findings (Wanta et al, 1989; Severin and Tankard, 1992). Some presidents seemed to be responding to media coverage in their speeches, while others seemed to have more influence over subsequent coverage. Interestingly, one study found that the highest correlations were between media coverage before and after the speech, which "suggests a kind of stability or consistency of news coverage – probably due to news routines, news values used by journalists, and other factors in journalism itself" (Severin and Tankard, p. 217). This finding is similar to the concept of inertia studied by Wood and Peake (1998).

What few scholars have examined are recent presidents' weekly radio addresses. Beginning in April 1982, President Reagan spoke to the nation each week during a 5-minute radio broadcast. In 1993, a newly elected Democratic president, Bill Clinton, decided to follow in Reagan's footsteps. He continued to give the radio speeches almost every Saturday of his presidency, and his successor, George W. Bush, gives them, as well. For the presidents, the radio addresses are a means of presenting their agenda, "a set of issues that are communicated in a hierarchy of importance at a point in time" (Dearing and Rogers, 1996, p. x.), to the public. Reporters cannot interrupt with questions, and the president is free to discuss whatever he wishes. When Reagan began his weekly radio addresses, they were "seen as an effort by the President to reestablish a public presence and, at the same, to escape some of the press and television editing of his statements and interpretations of his acts. The controlled setting also eliminated the danger of uninformed commentary that had occasionally marked the President's news conferences" (Martin, 1984, p. 817).

How successful Reagan was in directly reaching the public is not known. Mutual, NBC and ABC carried Reagan's first talk, and NBC and ABC made the addresses available to affiliates, which were under no obligation to carry them (Martin, p. 817). However, if few Americans heard the broadcasts live, many more could learn about them – in a more filtered form -- from newspapers or on the nightly television news. The only scholar who appears to have studied Reagan's radio addresses is Howard H. Martin (1984), who found that the addresses were reported fairly regularly by NBC, CBS and *The New York Times*. Martin concluded that Reagan "frequently managed to set the agenda – for media reporters and for Democratic spokesmen charged with the job of respondent – and has been able to have his say in a setting he controls, thus minimizing the danger of errors, off-hand misstatements and faux pas" (p. 821). But Martin also noted that the president was "unable to escape the filtering process presided over by the media gatekeepers." What Martin did not examine, though, is whether the president was more effective in influencing media coverage when he spoke about foreign policy issues rather than domestic issues, and whether his radio addresses took on added significance – were given more prominent news coverage -- during a military crisis.

When it comes to Clinton, scholarly attention to his radio addresses seems to be nonexistent. Instead, scholarly research and other articles have focused on Clinton's use of radio call-in shows, talk shows and advertising as a campaign tool in 1992 (Bernstein, 1996; Diamond et al, 1993; Dobrez, 1996; McAvoy, 1993; Petrozello, 1994; and Owen, 1997). McAvoy noted how the White House was going directly to television and radio stations in the ill-fated effort to promote Clinton's health-care reform plan. "You all have the best grass-roots means of reaching the public," presidential adviser David Gergen told talk-show hosts. "We want you to feel you can call on this administration if you want people to come on your shows. I happen to be a big, big believer in radio" (McAvoy, p. 54). In 1993, *The Chicago Tribune* reported that Clinton's was the first administration to have a radio director in the White House's media affairs office

(Kening, 1993). "Radio is important to us and is a very powerful medium that is too often given less attention than television and print," said Richard Strauss, the new radio director (Kening). Clinton began delivering his weekly radio addresses in February 1993. Because the first address, given from an otherwise empty Oval Office, was "kind of flat," aides soon turned it into an event, filling the office with White House staffers, federal workers and their families (Cerio and Howard, 1993).

As was the case with Reagan's addresses, how many people listen to Clinton each week is unknown. Major radio networks broadcast his first speech live, but several station executives said live coverage would continue only if the addresses were newsworthy. Although major networks, such as UPI, AP, CBS, ABC, Mutual, NBC, Unistar and CNN, said they would continue to air the speeches, the networks' affiliates are under no obligation to carry the addresses (Viles, 1993). In 1996, WTOP-AM, the only Washington-area outlet to carry Clinton's speeches, stopped because the addresses did not fit the station's new format (Milk, 1996). However, according to the White House Radio Office, stations in 13 of the country's top 15 markets carried the address in 1998.[1]

Regardless of how many people listen or do not listen, Viles says, "The Saturday speech … has been used more as an opportunity to set the agenda for weekend news coverage than to reach a live audience via radio." Can that assumption be supported? This pilot study will examine how successfully Presidents Reagan and Clinton were during one year of office each in using their weekly radio addresses to influence the media's agenda, specifically the agenda of *The New York Times*. *The Times* was chosen for the pilot study because it is an elite newspaper known for its coverage of international affairs and its influence among the United States' foreign-policy elite (Cohen, 1963; O'Heffernan, 1991). In addition to collecting descriptive statistics on the content of the radio addresses and the extent and prominence of news coverage, the following hypotheses will be tested:

1) Presidential addresses on foreign policy are more likely to generate news coverage than are addresses on domestic policy.
2) Presidential addresses on foreign policy are more likely to generate more prominent news coverage than speeches on domestic policy.
3) Presidential radio speeches will be given even more prominent news coverage during a foreign-policy crisis. As defined by international relations scholars, a foreign-policy crisis is a situation that the nation's top decision-makers perceive to be a threat to the United States' basic values, that must be responded to within a finite time period and that has a high probability of involvement in military hostilities (Wilkenfeld, Brecher and Moser, 1988).

The data and methodology

The primary research method used was content analysis, a technique for the "objective, systematic and quantitative description of the manifest content of communication" (Stempel, 1989, p. 125). The objective is to define categories so precisely that different people can get the same results, and the "results depend upon the procedure and not the analyst." For this research, three main variables were conceptualized: the presidential agenda, the media agenda and the existence of a foreign-policy crisis.

1. The presidential agenda was defined as the primary topics the president addressed during each radio address in two years, 1983 for Reagan and 1993 for Clinton. Those years were chosen because international relations scholars have determined that the United States experienced foreign-policy crises during those years (*International Crisis Behavior Project: Part II*). Transcripts of the addresses, published in the *Public Papers of the President*, were available via Lexis-Nexis. After an initial coding of the content, each radio address – 53 for President Reagan and 47 for President Clinton – was coded as belonging primarily to one of two

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[1] Email to the author from Megan Moloney of the White House Radio Office on June 9, 1998.

categories: domestic (0) or foreign policy (1). Domestic issues included such topics as health care, education, balancing the budget and national holidays. Using Andrade and Young's example (1996, p. 592), a speech was counted as a foreign-policy speech if the "speech dealt with foreign policy, war diplomacy, foreign trade or defense policy." Admittedly, the line between domestic and foreign policy – on international trade, for example -- can be fuzzy, but global economic issues were considered to be foreign-policy issues for this research as some scholars have argued they should, especially since the end of the Cold War (Baldwin, 1995). Because one researcher did all the coding, the researcher tested "whether slippage (had) occurred in the single coder's understanding or application of the protocol definitions (Riffe et al, p. 51)." A large sample of the data collected was recoded at the end of the study, and the level of agreement between the initial and post-coding was calculated to be 91 percent.

2. The media agenda was defined as next-day coverage in *The New York Times*. This research was not concerned with which other stories were on the front page on any given day, but rather with the president's success in getting next-day news coverage of the radio address. For each Sunday edition of the newspaper following a radio address, the coder used Lexis-Nexis to determine if any stories mentioned the radio address. If so, the following information was coded: the page number, whether the story was written by a wire service or an NYT-affiliated reporter, the number of words and whether the president's radio address was the main topic of the story. Those first three variables were chosen as indicators of the story's prominence and newsworthiness to journalists. In other words, a long story on the front-page is more prominent than a short story inside the paper. Those variables, as well as whether a story is staff written or pulled from the wire services, also indicate how important the newspapers' editors viewed the story. Stories that appeared in the Week in Review section were not included.

For whether the presidential address was the focus or main topic of the next-day news coverage, the addresses were coded as "yes" (1) if they were mentioned in the lead paragraph or if at least 50 percent of the article was about what the president said during the address. The logic for including the variable is to provide a more precise measure of the president's ability to set the media's agenda. If a news story "clearly focused" on the president's radio address, it would suggest the president had succeeded. If not, then one could question whether the president set the media's agenda or whether external events or the media's own agenda contributed more to the newspaper's reaction to the radio address that particular day.

3. The presence of a foreign-policy crisis at the time of each address was determined using data from the International Crisis Behavior Project, 1918-1994, Part 2: Foreign Policy Crises. At the time of this study, crisis data were available for only two years, 1993 and 1994. During President Reagan's two terms, crises occurred in 1983 and 1984. The 1983 foreign policy crisis, the invasion of Grenada, was more memorable than the 1984 crisis when Soviet MIGs docked at Nicaragua's port, so 1983 and, to be symmetrical, 1993, were chosen as the years for the study. 1983 was the next-to-last year of Reagan's first term, and 1993 marked the first year of the Clinton presidency. Ideally, two more comparable years would have been chosen, but the parameters of the available ICB data set made that impossible.

When appropriate for the nominal-level data gathered, chi-square analysis was used to test the hypotheses. To assert significance, the p value must be .05 or less.

Findings

In 1983, Ronald Reagan gave 53 radio addresses. (On one day, he gave two addresses.) Of those, 17, or 32 percent, were on foreign policy, and 36, or 68 percent, focused on domestic

Table 1

On the radio: What Reagan and Clinton talked about

	Reagan	**Clinton**
Foreign policy	17 (32%)	8 (17%)
Domestic policy	36 (68%)	39 (83%)
Totals	53	47

Table 2

Next-day news coverage: Comparing presidents

	Reagan's radio addresses	**Clinton's radio addresses**
Coverage in NYT	45 (84.9%)	24 (51%)
No coverage	8 (15.1%)	23 (49%)
Totals	53	47

concerns. *The New York Times* mentioned or otherwise covered the president's radio address on 45 occasions, or 85 percent of the time. These findings are in line with those of Martin (1984), who examined a slightly different period. In 1983, nine addresses received mention in more than one story in the next-day's newspaper, and eight speeches were ignored entirely.

Ten years later, Bill Clinton took to the airwaves 47 times during his first year in office. Of those addresses, eight, or 17 percent, were on foreign policy, including six speeches on the North American Free Trade Agreement and the global economy. The majority of the addresses, 39, or 83 percent, focused on domestic issues. As one might expect of a president whose campaign strategy was "it's the economy, stupid," Clinton focused significantly more on domestic issues than did Reagan. (See Table 1.) President Clinton also was less successful than Reagan at attracting next-day news coverage for his radio addresses. Just 51 percent received some mention in the next day editions of *The New York Times*, and 49 percent were ignored completely. (See Table 2.) Seven of Clinton's speeches were mentioned in more than one story the next day.

Table 3

Foreign policy vs. domestic policy radio addresses: What gets attention

Topic	Reagan Receives Mention	Reagan Receives No Coverage	Clinton Receives Mention	Clinton Receives No Coverage
Foreign Policy	15	2	4	4
Domestic Policy	30	6	20	19
Total	45	8	24	23

H1: Presidential addresses on foreign policy are more likely to generate news coverage than are addresses on domestic policy.

The hypothesis was examined for Presidents Reagan and Clinton separately. In President Reagan's case, the foreign-policy radio addresses received next-day coverage 88 percent of the time, and the domestic-policy speeches were mentioned 83 percent of the time. Ten years later, President Clinton's addresses, whether about foreign or domestic policy, received next-day mention about half the time. The differences do not appear to be significant, and the sample sizes are too small to draw any conclusions. (See Table 3.) Although statisticians differ about the robustness of chi-square analysis, one rule of thumb is that it should not be used when more than 20 percent of the cells have an N of 5 or less (Runyon et al, 1996, p. 598), so chi-square analysis was not attempted. Additional data from other years are needed to test this hypothesis further.

H2: Presidential addresses on foreign policy are more likely to generate more prominent news coverage than speeches on domestic policy.

Chi-square analysis found no significant differences in the prominence of media coverage given to President Reagan's addresses on foreign policy vs. domestic issues. Chi-square analysis was not conducted on Clinton's 1993 radio addresses because of the small sample of foreign-policy addresses.

As an exploratory measure, the data for 1983 and 1993 were combined, and statistically significant differences were found in the prominence of coverage for domestic vs. foreign-policy

Table 4

Coverage of foreign policy vs. domestic policy: Pooling the 1983 and 1993 addresses

Topic	Radio Address Receives Front Page Mention	Radio Address only Mentioned Inside	Radio Address Receives No Coverage	Totals
Foreign Policy	15	4	6	25
Domestic Policy	18	32	25	75
Total	33	36	31	N = 100

D.F. = 2; critical value of X^2 (one-tailed, directional) = 4.605; $X^2 = 11.595$ ($p < .01$)

addresses (Table 4). About 60 percent of the two presidents' foreign-policy speeches received front-page mention in *The New York Times*, compared to 24 percent of the speeches on domestic policy. The differences in coverage were statistically significant with $X^2 = 11.595$, D.F.=2, $p < .01$. This result shows some support for the hypothesis that the foreign-policy speeches would receive more prominent next-day coverage, so this hypothesis merits further and more stringent testing with either the complete population of radio addresses for each president or a larger, but random sample, of their addresses.

H3: Presidential radio speeches will be given even more prominent news coverage during a foreign-policy crisis.

During a foreign-policy crisis, the president was expected to use his radio address to talk about the crisis, and the radio address was expected to receive more news coverage and more prominent news coverage than at other times. These hypotheses were not supported.

In 1983 and 1993, the International Crisis Behavior Project data indicate one foreign-policy crisis for each president. In 1983, Reagan invaded the Caribbean island of Grenada to eliminate its Marxist regime and, ostensibly, to free American medical students from the island (Spanier, 1995, p. 208). The 1993 crisis was North Korea's withdrawal from the Non-Nuclear Proliferation Treaty. In both cases, the criteria for defining a crisis were met. Both were perceived by decision-makers to constitute a threat to basic American influence in the international system or regional subsystem. In both cases, decision-makers believed there was a finite time for response, and there was an increased probability of military hostilities (Wilkenfeld, Brecher and Moser).

According to the International Crisis Behavior project researchers, the Grenada crisis began Oct. 19, 1983, and ended Oct. 28, 1983. The North Korea crisis began March 12, 1993, and was not resolved until Oct. 21, 1994. The beginning dates are the dates at which the decision makers perceived the crisis trigger, "the specific act, event or situational change which leads decision makers to perceive a threat to basic values, time pressure for response and heightened probability of involvement in military hostilities" (Wilkenfeld, Brecher and Moser). The crises ended when the decision-makers perceived a decline in tensions. During those crises, did the presidents use their weekly radio speeches to address the issue? The answer is an unequivocal no for 1983 and 1993. Neither president devoted any significant time to talking about a crisis, as defined by Wilkenfeld, Brecher and Moser, in 1983 and 1993. President Clinton did, however, use one paragraph of his July 9, 1994, address to mention ongoing negotiations with the North Koreans in Geneva. The hypothesis that radio addresses on a foreign-policy crisis would receive more media coverage was not supported.

How might one explain this finding? For starters, it may be that the president and the media define a foreign policy crisis differently than do scholars of international relations. In 1983 and 1993, significant events did occur that the presidents deemed worthy of addressing in their weekly radio addresses. Andrade and Young noted, "Many international events important to the U.S. occur without direct involvement or influence by the president but nonetheless affect the president's agenda" (1996, p. 603). The example they cite is the downing of KAL 007 in 1983, an event Reagan did focus on in his weekly radio address, which *The New York Times* covered. Indeed, the *Times* ran one story about Reagan's speech on the front page, a wire service transcript of his address on the inside and another story mentioning the address on inside. Similarly, in April 1983, after American Marines were killed in Beirut, President Reagan discussed the tragedy in his radio address, and coverage of the event received front-page coverage. Ten years later, after U.N. forces attacked Mohammed Aidid in Somalia, President Clinton spoke about the offensive during his radio address the next day. What Clinton said during the radio address was included in a front-page article the next day about the event itself.

Another possible explanation for why the hypothesis about radio addresses during foreign policy crises was not supported is that the data were limited to 1983 and 1993. Those years may not be representative of other years. Had 1994 been chosen for this research, the results might have been different. In 1994, for example, the United States was faced with two foreign-policy crises: the semi-occupation of Haiti and Iraq's redeployment near the Kuwaiti border. Clinton devoted two radio addresses to Haiti and one to the situation with Iraq. He mentioned both crises in another radio address.[2] It may be that the sample size – of both crises and radio addresses -- was too small to detect trends in the interplay between the radio addresses, media coverage and foreign-policy crises.

An additional explanation that should be considered is the nature of the radio addresses themselves. The hypothesis was that a routine event, the weekly radio address, would take on new significance to the media during a foreign-policy crisis. Presidents have other means, however, to speak to the American people during a crisis through news conferences and televised addresses, for example. When the president believes the time is right to make his case for deploying U.S. troops abroad, he can make his case whenever he chooses. The media, and the public, will listen. The president has no need to wait until the weekly Saturday morning radio address. The president may be particularly successful in setting the media's agenda in terms of next-day coverage when he gives a televised address during a crisis, but his purposes – and the media's expectations – likely are different during the weekly radio address.

A Closer Look at Agenda-Setting

The previous analyses were based on whether a president's radio address was *mentioned* in a next-day story in *The New York Times*. However, aside from merely helping to put an issue on the public's agenda, recent agenda-setting studies have suggested media content can move beyond telling people what to think about -- Cohen's 1963 articulation of the agenda-setting theory -- to actually influencing how and what people think. (See Schoenbach and Semetko, 1992, and Iyengar and Kinder, 1993, for example.) If one is concerned, as presidents and their aides presumably are, about the connection between media content and public opinion, then it makes sense to examine the media content more closely. How much attention in a news story is paid to the president's viewpoints as expressed in the radio address? How much space is given to report on others' opinions, external events and other topics? Answering these questions comes closer to answering questions about agenda setting as the theory has evolved.

Unfortunately, Martin (1984) did not define what he meant by *New York Times* coverage except to say he examined microfilms of the city edition. Presumably, he judged the content by looking at headlines. If that is the case, then he was not likely to uncover those occasions when a radio address was mentioned in a *New York Times* story but not the focus of the story. Making those distinctions, however, is possible through Lexis-Nexis, which can search for any word combination in any story, and would shed greater light on the president's agenda-setting abilities.

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[2] According to a Lexis-Nexis search of the *Public Papers of the Presidents*, Clinton used his radio address to speak about Haiti on Oct. 17 and Oct. 24, 1994, and to talk about Iraq on Oct. 29, 1994. He talked about both situations Oct. 15, 1994.

Table 5

Is Reagan really setting the agenda? How the 1983 radio addresses were covered

	Main topic of news story	**Not main topic of news story**	**Total**
Front Page stories	11	10	21
Inside stories	31	4	35
Total	42	14	56

Table 6

Is Clinton really setting the agenda? How the 1993 radio addresses were covered

	Main topic	**Not main topic**	**Total**
Front Page	2	9	11
Inside coverage	10	10	20
Total			

Preliminary results suggest further limitations on a president's ability to set the news media's agenda. In 1983, 21 front-page news stories mentioned President Reagan's radio address the day before. Of those, just over half focused on what the president said (Table 5). Ten years later, 11 front-page stories mentioned President Clinton's radio addresses of the day before, but only two focused on what Clinton said (Table 6). In some cases, such as the U.N. attack on Aidid's headquarters in 1993 and the Marines' death in Lebanon in 1983, front-page articles noted what the presidents said in their radio addresses, but the coverage focused more on the events themselves. In other cases, particularly for Clinton, the writer would mention the radio address in passing, noting what the president "didn't say" and proceeding to discuss an entirely different issue. This may be an example of the growing disdain journalists seem to have for politicians and the journalists' tendency over the years to shorten how much they directly quote the politicians (Patterson, 1993).

Also interesting is that, for President Reagan at least, next-day stories that ran inside the newspaper seem to be much more likely to focus on what Reagan said. Of the 42 stories that focused on what the president said, 31, or 74 percent, ran inside. Of the 14 stories that did not focus on what he said, 10 were on the front page. Perhaps Reagan's comments were inserted into those stories primarily to reinforce the timeliness of the stories.

What is clear is that even if a president's radio address is deemed worthy of mention in front-page story, the president has no guarantee that his agenda – and his interpretation of an issue – will be given prominence in that story. In addition, the Reagan data also suggest that *The New York Times* may be less concerned about giving the president a forum for his agenda inside the paper than on the front page because it wants to preserve the more prominent Page One space for its own agenda. That hypothesis merits exploration.

Evidence of journalistic priorities

Finally, other indicators of how newsworthy *New York Times* editors believed the weekly radio addresses to be are who wrote the stories and how long the stories were. One could argue that if an article were staff-written, then *Times* editors expected the address to be newsworthy. Why would the newspaper assign a reporter otherwise? One wonders, though, if their expectations leading up to an address influenced their ultimate decisions on where to place a story.

Of the 21 front-page stories mentioning Reagan's radio addresses in 1983, all but one was written by a *New York Times* reporter or someone affiliated with the *Times*. Of the 35 stories inside the paper, about half were staff written and half were from the wire services. The front-page stories averaged 1,089 words; the inside stories averaged 452 words. Ten years later, all 11 of the front-page stories that mentioned Clinton's radio addresses the next day were written by journalists affiliated with the *Times*. Interestingly, even inside the newspaper, all but one of the next-day stories mentioning the address were staff written. The data suggest the *New York Times* editors had become more determined to make independent evaluations of the newsworthiness of Clinton's radio addresses and what he said. The page-one stories averaged 1,313 words, compared with 745 words for the inside stories.

Conclusions/Suggestions for Further Research

First, what is clear from this research is that editors at *The New York Times* were far less likely to consider President Clinton's 1993 radio addresses to be newsworthy than they did President Reagan's weekly addresses in 1983. This research cannot answer why. Did the editors think less of President Clinton as a president? Do partisan or personal considerations influence coverage? In a study of Franklin D. Roosevelt's State of the Union speeches and media coverage, researchers found stronger correlations between Roosevelt's issue agenda and media coverage in newspapers that supported him than those papers that opposed him (Johnson, Wanta, et al, 1995). Another possible explanation for the decline in news coverage from Reagan to Clinton is that over the 10-year-period, the media may have become more cynical about the radio addresses being used as a public relations tool. In general, political scientists have documented a growing journalistic cynicism toward politicians coupled with shorter and shorter sound bites and verbatim quotes during campaigns, for example (Patterson, 1993). President Reagan began his radio addresses in 1982. Further research should explore if coverage of his addresses declined over the years as the novelty wore off. Martin (1984) found that coverage did not decline from 1982 to 1983, but researchers have not looked at Reagan's second term. Trends in coverage of Clinton's addresses over the years should be examined as well.

In addition, just because *The New York Times* was not as inclined to report on Clinton's radio addresses in 1993, does not mean other news organizations followed suit. The *Times* did not cover any of Clinton's radio addresses in December, but other news organizations, including

The Washington Post, USA Today, Houston Chronicle, Orange County Register and numerous others, did. One cannot assume that *New York Times* coverage is representative of other newspapers' coverage. Indeed, one reason the *Times* was selected for this pilot study was because of its elite nature. At any rate, it is plausible that while President Clinton was less successful in setting *The New York Times'* agenda, he was more successful in setting the agenda of other newspapers. Furthermore, he and his predecessors also may be interested in how likely the broadcast media were to mention the radio addresses and replay sound bites from them. A brief recap of the radio address is a regular feature on CNN's Headline News each Saturday.

This pilot study showed no support for the hypothesis that speeches on foreign policy would receive more coverage than speeches on domestic policy. However, an exploratory analysis offered some support for the hypothesis that the foreign-policy addresses would receive more prominent coverage. Although combining the Clinton and Reagan data is suspect because the data were not randomly selected, the effort does suggest that given a large sample size, the hypothesis likely will be supported. Further study is warranted.

Third, what this research shows is that in 1983 and 1993, Presidents Reagan and Clinton did not use their weekly radio addresses to talk about foreign-policy crises. If they and other top decision-makers felt the nation's basic values were threatened, that they had limited time to respond and that military hostilities were probable, then the radio address was not the means by which they chose to communicate with the American public or whoever else might be listening. However, a cursory examination of 1994 data indicates that conclusion may not hold for every year. A more comprehensive data set, all the years of Reagan and Clinton radio addresses, for example, would be needed before making any firm conclusions about the modern presidents' use of the weekly radio addresses during a crisis.

Furthermore, although Clinton and Reagan did not use their radio speeches to address foreign-policy crises as defined by Wilkenfeld, Brecher and Moser, the media – and perhaps presidents – may define crises differently. Is it a crisis when 212 Marines are killed in a terrorist blast in Beirut? Is it a crisis when the Soviet Union shoots down a civilian Korean airliner as it was accused of doing in September 1983? Andrade and Young (1996) called these occurrences "major international events," but did not explicitly use crisis terminology. In these cases, the presidents did talk about foreign-policy issues, and coverage of their radio addresses did make front-page news. The question then is what kind of foreign-policy addresses do get the media's attention. In their conclusion, Wood and Burke suggested more research needs to be done that "differentiates on the basis of issue salience, importance or issue type" (1998, p. 182). This researcher seconds that conclusion. A qualitative analysis may provide richer data on the relationship among external events, the presidential agenda and the media's agenda.

Methodological concerns

One advantage of a pilot study is that any methodological concerns uncovered can be addressed before a full-scale study is undertaken. This pilot study highlighted two main areas of concern: how precisely the radio addresses are coded and how precisely the media content is coded, as well. The data were collected at the nominal level. That is to say that the presidents' radio addresses were coded as one of two categories: domestic policy or foreign policy. Of course, several speeches covered both areas, and the coder had to determine which category predominated. On a few occasions, however, an address was coded as domestic policy, but the subsequent new's coverage was only on the shorter portion of the speech addressing foreign policy. Rather than collect nominal-level data, future researchers might want to collect more precise interval-level data, for example, the number of paragraphs related to domestic policy or foreign policy. Although such an effort would be labor-intensive, the statistical results would be cleaner and perhaps more conclusive.

In addition to the presidential agenda, the media agenda also proved to require a more complex coding procedure. Rather than determine if a news story following the radio address was primarily about the president's speech or not, a yes-or-no nominal distinction, a closer look at the newspaper's sourcing practices would yield more insightful detail. Again, in retrospect, interval-level data would be more powerful. One could examine the media coverage paragraph by paragraph and determine the number of paragraphs devoted to the president's opinions and words vs. the number of paragraphs devoted to other types of sources. Such coding could greatly enhance media scholars' understanding of the president's agenda-setting abilities via the weekly radio addresses.

Some other limits of the study should be noted or reiterated. This pilot study only examined the president's ability to influence media coverage one day a week. Sometimes, presidential radio addresses are mentioned in news stories or editorial columns later in a week or even months after the fact. In addition, this study was limited to *The New York Times*. Although the study provides further evidence that the president's ability to influence the media agenda is limited – even when it comes to foreign policy where the president is considered to be pre-eminent – the results cannot be generalized beyond the radio addresses, the years studied or the publication studied. A more comprehensive research effort would be required.

Finally, this study concerned only the question of how successful presidents are in influencing the media's agenda as judged by next-day news coverage. How presidential agendas are set was not examined. The emphasis here was on how much success a president had in getting his radio address covered, not how he chose the topic for the media address.

Nevertheless, Andrade and Young (1996) have found that factors such as approval, presidential influence in Congress and international events affect the president's emphasis on foreign policy in speeches. Do those factors also influence editorial decisions about what is newsworthy in a presidential radio address? Other issues include the journalists' professional values and what stories are available to news editors. Martin (1984), for example, notes that little administrative or legislative news is generated on Saturdays, the day of the radio addresses. The president's radio addresses, usually routine, weekly events, must compete with whatever other news stories have been written for the day, and the competition may be even steeper for a Sunday edition. How the gatekeepers make decisions about covering routine presidential speeches such as the radio addresses is a rich area for future study.

Despite the limitations of this study, it provides further evidence that the president's ability to influence the media agenda cannot be taken for granted – even in the realm of foreign policy. It also points to new questions about the necessary and sufficient conditions for predicting when and by which means the president can set the media's agenda.

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Teens as the Vulnerable Surfers:
The Third-Person Perception and Commercial Web Sites Censorship

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Teens as the Vulnerable Surfers:
The Third-Person Perception and Commercial Web Sites Censorship

Abstract

The third-person perception states that when confronted with negatively perceived message, people tend to overestimate the message's effect on others compared to one's-self. It is also suggested that this perceptual bias motivate people to take action against such message. To explore this possible relationship, this study examined the perceived effects on self and others -- other adults and teenagers -- for commercial web sites. The results found the perceptual disparity between the estimated impacts on self and others for commercial web sites and further demonstrated that this third-person perception explains pro-censorship attitudes toward these web sites, even after controlling for potential confounding variables.

Teens as the Vulnerable Surfers: The Third-Person Perception and Commercial Web Sites Censorship

As consumer acceptance and advertiser ambitions have driven the rapid growth of the Internet, there is much optimism regarding consumer interest in web-delivered advertising and marketing tactics (Nowak, Shamp, Hollander, & Cameron 1999). Consumers use the Internet to accomplish a variety of goals such as information searches, entertainment, communication, and electronic shopping. Recent studies of online users found that at least one third of interactive households use the web to investigate or buy products or services (Moran 1997), with as many as 70% of regular web users having made one or more online purchases (Magill 1998). The U.S. spending for online advertising is expected to grow from $1.3 billion in 1998 to $10.5 billion in 2002 (Mand 1998) and Internet-related commerce is projected to increase from $1.9 billion in 1998 to $4 billion by year 2000 (Jupiter Communications 1998).

As the Internet has become an ingrained part of the digital age from day to day, there have been growing concerns about "commercial harms" that the Internet supposedly causes (Donnelly 1996). The concerns about the darker side of the Internet gave an impetus to investigating a number of web sites that are considered to be potentially harmful to consumers, especially children or teenagers. Exemplary web sites include those which are devoted to controversial activities or contents such as pornography, violent computer games, online auctions, and gambling.

Considerable efforts to hinder the harm that the Internet allegedly causes to consumers have stemmed from a number of sources such as online industries themselves, consumer interest groups, legislature, and government agencies. Claims of undesirable consequence lead to numerous calls for regulating the contents, products, or services that commercial web sites promote. These regulations include the Child Online Protection Act (COPA) to restrict obscene materials to minors (McNeely & Moorefield 1999), the Project Safe Bid to curb online auction fraud (Roth 2000; Snyder 2000), the Internet Gambling Prohibition Act to ban cyber gambling (Rosen 2000), and various attempts to protect consumers' online privacy (Furger 2000). The growing willingness to restrict commercial web sites relies on the belief that these restrictions will help reduce pornography distribution, violations of intellectual-property rights and consumer privacy, new types of crime such as online auction fraud, and addiction to online gambling. Critics also believe that these regulations can protect "vulnerable groups" such as children, teenagers, women, or minors from dangerous materials or activities on the Internet.

The obvious example of attempts to regulate Internet content is the current controversy on pornographic web sites. In an attempt to restrict minor access to indecent and patently offensive speech on the Internet, Congress passed the Communication Decency Act (CDA) in 1996. However, in a lawsuit by the American Civil Liberties Union, the Supreme Court struck down the CDA by stating that it violated the First Amendment (McNeely & Moorefield 1999). More recently, as the second attempt to regulate pornography on the Internet, Congress proposed the COPA. In remedying the defects in the CDA, the COPA applies only to those communications made for commercial purposes, which can be considered materials harmful to teens or children.

The debate concerning the regulation of Internet content and the protection of minors is not limited to pornographic web sites. Commercial web sites to promote violent computer games have raised many concerns among parents, educators, and politicians (Simons 1999; Tribe 1999). As the most popular form of entertainment in U.S., the gaming industry is moving to the Internet. Given that children or teens have potentially unlimited access to computers and the Internet, it is plausible that, without proper monitoring, they will access easily Internet game sites to promote interactive violence. Critics have blamed violent computer games for desensitizing gamers to bloodshed. In a search of what might cause the sort of school violence, teachers and politicians nationwide have held the media -- especially the Internet -- under deep scrutiny. In response to public outrage over school violence, politicians provided resources to help parents protect their children from objectionable or offensive materials on the Internet.

Online auction sites are one of the most hotly debated areas in electronic transactions. According to e-commerce analyst at Forrester Research, by 2003, $19 billion in goods will be sold to consumers through online auctions and other supply-driven dynamic pricing schemes, up from $1.4 billion in 1998 (O'Brien 2000). Although online transactions via auction sites are booming, consumer protection groups advocate for restrictions of online auction sites because of online fraud and controversial products sold in an auction on the Internet site. The National Consumer League in 1999 reported that 68% of the net consumer complaints came from online auctions (Gardner 1999). To address the fraudulent practice of online auctions, the Federal Trade Commission (FTC) released a consumer alert notifying prospective online auctioneers that fraud was becoming more prevalent and launched Project Safebid, an effort to get law enforcement to treat auction fraud cases seriously (Roth 2000).

Another concern about online auctions is the nature of consequences of controversial products put on sale. In 1999, a human kidney garnered bids up to $5.7 million on eBay before the firm pulled the plug on the sale (Henderson 2000). Most auction sites now cooperate with law enforcement in terms of prohibiting controversial products. The list of prohibited items includes guns, drugs, alcohol, body parts, endangered species, internal organ of animals, and so on. However, it is difficult to monitor possible controversial products sold on the net, especially when bidding for the products is accessible to children and teenagers. Critics support restrictions of auction sites because these controversial products encourage younger online consumers to engage in behaviors that are harmful or undesirable.

However, lawmakers or e-commerce industry advocates have expressed conflicting viewpoints on censoring commercial web sites or regulating e-commerce. Some opponents of regulations argue that the proposed or enacted laws unnecessarily undermine freedom of commercial speech and could negatively impact electronic commerce. For example, free speech advocates contended that the COPA is unconstitutional by being overly restrictive in attempting regulating minors' access to harmful materials on the Internet (McNeely & Moorefield 1999). Some online industries are worried that legislature regulations can discourage consumers from participating in online transactions or make the commercial growth shrink in the online marketplace. Not surprisingly, online industries are strenuously arguing for a laissez faire government approach, pursuing an industry self-regulation standard (Snyder 2000). Furthermore, the opponents of regulations assert that the regulations would deprive interested consumers from learning about or acquiring lawful products and services.

Given these mixed viewpoints on censoring commercial web sites and their potential impacts on the online advertising industry, we need to better understand the rationales and motivations underlying pro-censorship attitudes toward web sites. However, little research has been done to explore consumers' censorship attitudes toward commercial web sites. Thus, the primary purpose of this study is to examine consumers' willingness to censor commercial web sites and the factors affecting their attitudes censoring these web sites.

Third-Person Effect

Prior studies into the censorship of controversial media content have suggested that people support censorship in part because they perceive other members of society to be vulnerable to these messages. This explanation is referred to as the third-person effect in the field of mass communication. The third-person effect claims that individuals perceive the impact of presumably undesirable communications to be greater on others than on themselves, and as a result they are more inclined to support censorship of these messages (Davison 1983). People believe that undesirable messages do not have any negative effects on them, but fear it will adversely affect others. This is why they tend to support censorship toward these messages.

Some scholars account for the processes that underlie the third-person effect by applying attribution theory concepts such as the fundamental attribution error and egotistical differential attributions (Rucinski & Salmon 1990; Gunther 1991). According to the fundamental attribution error, observers generally underestimate other people's awareness of situational (external) factors such as the persuasive intent of media content and, thus, overestimate the "others" susceptibility to this content. But in judging themselves, observers are quite aware of the role of situational factors like persuasive intent. Due to their awareness, they view themselves as less susceptible to these message effects.

Observers may also engage in egotistical differential attributions (Miller 1976; Stephan & Gollwitzer 1981) or self-positivity biases (Perloff 1993). When a message is deemed negative or when being persuaded by it would be regarded as unintelligent, people perceive the message to have more influence on others in order to enhance their perception of personal invulnerability and control. Individuals may estimate more influence on others in order to preserve self-esteem and a sense of control by seeing themselves as more intelligent, and consequently they deem themselves less susceptible to undesired influence (Gunther 1991). However, when a message is considered positive, they attribute more effect on themselves since they are "smart enough" to recognize its value (Cohen & Davis 1991; Gunther & Thorson 1992).

Theorists have examined the conditions that facilitate these perceptual discrepancies. Some studies have found that there is a greater disparity between perceived effects on the self and others when the source of the message is judged to be negatively biased (Cohen, Mutz, Price, & Gunther 1988; Gunther 1991) or when the audience attributes persuasive intent to the communicator (Gunther & Mundy 1993). Other research shows that those who consider an issue important (Mutz 1989), perceive themselves as experts (Lasorsa 1989), or are highly ego-involved in the message (Perloff 1989) tend to perceive that others will be more affected by message content. Further, the extent of biased perceptions may increase as the hypothetical others become progressively more psychologically distant from the respondents (Cohen et al. 1988; Cohen & Davis 1991; Gunther 1991).

While much research has born out Davison's (1983) initial assertion that a bias in perception exists, his contention that the overestimation of negative effects of a message on others leads people to take some preventive action has received mixed support. Some of the research examining a behavioral outcome of the third-person effect failed to detect one (Gunther 1991; Salwen 1998; Salwen & Driscoll 1997). One explanation for these findings is that people do not exhibit the expected behavior because they view their perspective as different from the opinion of the general public; a spiral of silence effect inhibits their behavior (Mutz 1989). Alternatively, it can be argued that belief in the First Amendment overpowers fear of harmful media effects on others (Perloff 1999). However, recent work on entertainment messages and advertising has found that the third-person effect predicts support for censoring these types of media contents. For example, they include violence in TV, pornography, violent and misogynic rap lyrics, or advertising for controversial products or services (Gunther 1995; McLeod, Eveland, & Nathanson 1997; Rojas, Shah, & Faber 1996; Shah, Faber, & Youn 1999).

Other Factors Affecting Censorship Attitudes

Research on factors contributing to support for expressive rights of the mass media in general and advertising in particular has often yielded mixed results (Tewksbury, Huang, & Price 1996). Some studies have found that attitudes toward censorship are significantly associated with religiosity, authoritarianism, conservatism, and traditional family ideology (Hense &

Wright 1992; McClosky & Brill 1983; Ritts & Engbretson 1991; Tewksbury et al. 1996). However, not all studies have found support for these relationships. For example, some studies report little or no relationship between pro-censorship attitudes and authoritarianism (Schell & Bonin 1989), or conservatism (Christensen & Dunlap 1984; Thompson 1995). One study even reports a reverse relationship between conservatism and censorship attitudes (Suedfeld, Steel, & Schmidt 1994).

Comparable confusion surrounds demographic predictors. Studies have yielded conflicting findings regarding the relationship between demographic variables and support for individual and media rights of free expression. Some studies suggest that men are more tolerant of expressive rights than women (Andsager 1992; Miller, Andsager, & Wyatt 1992). However, others report no gender differences (Schell & Bonin 1989; Tewksbury et al. 1996). Tolerance for speech has also been shown to be related to age and educational level in some studies (Miller et al. 1992; White 1986), while others report no significant differences based on these variables (Ryan & Martinson 1983; Schell & Bonin 1989).

Thus, the existing literature on ideological and demographic predictors provides a limited theoretical framework to understand the motivations for censorship. The one commonality across studies appears to be that a willingness to restrict speech is associated with the belief that the outcome of communications will be negative (Marcus, Sullivan, Theiss-Morse, & Wood 1995; Sullivan, Piereson, & Marcus 1982). Given the consistent finding of the importance of perceived harmful effects, it seems reasonable to expect that the third-person effect holds the most promise to account for a willingness to restrict or prohibit commercial web sites for controversial products or services.

Hypotheses

This study set out to determine if the third-person effect could explain pro-censorship attitudes toward commercial web sites. The third-person effect has been found to occur when the goal advocated in a message is perceived to cause negative effects. Since commercial web sites for legal but out-of-favor products or services are generally perceived as harmful or dangerous materials to either individuals or society, these web sites should be judged to have a greater effect on others than on oneself. Among various types of web sites, the current study deals with commercial web sites in general and three specific commercial web sites for pornography, violent computer games, and auctions. These web sites were chosen because they have frequently fueled the censorship debate due to the nature and consequences of the products or services they provide.

Recently, much of the discussion regarding commercial harms that the Internet supposedly causes is centered on their impacts on children and teens (Davidson 1999; Ferle, Edwards, & Lee 2000; Henke 1999; Richards, Stout, Strover, & Wartella 1999). Children and teens may be seen as being particularly vulnerable to potentially harmful messages promoting these products or services (Laczniak, Muehling, & Carlson 1995). According to Teenage Research Unlimited (TRU), a Chicago market research firm, teens use the Internet to research, download photos, chat about stars, and shop (Brown 1999). When chatting, surfing, or shopping on the net are becoming essential social activities of choice for computer-savvy teens, the likelihood that they are exposed to harmful materials posted on the net or controversial products or services promoted by the web sites is getting higher. Given teenagers' easy access to harmful materials available on the Internet, concerns about potential impacts of controversial web sites on teens are timely and important.

To determine this, this study looked at the perceived impact of controversial web sites on two groups of "others": other adults and teenagers. It is expected that the third-person effect will occur for each type of controversial web sites and the perceived effect will be greater for others, both adults and teenagers, compared to oneself. Thus, it is hypothesized:

H1a: People will judge commercial web sites to have a greater impact on other adults than on themselves.

H1b: People will judge commercial web sites to have a greater impact on teenagers than on themselves.

Davison (1983) originally stated that the overestimation of the negative impact on others would lead people to engage in some form of protective action. When messages are thought to have more powerful and harmful effects on others as compared to oneself, people may manifest pro-censorship attitudes. An important motivation for censoring this message is the paternalistic desire to help protect others from the harmful effects of this message. These beliefs could stem from "biased optimism" (Weinstein, 1989) and/or "self-positivity bias" (Fiske & Taylor, 1991; Raghubir & Menon, 1998). Therefore, it is suggested that pro-censorship attitudes are predominantly due to a concern that others will be affected by harmful messages, rather than a belief they will affect oneself. Since the first set of hypotheses predicted a third-person effect, this perception should result in greater support for restrictions on commercial web sites. Accordingly, we hypothesize:

H2a: The greater the perceived effect of commercial web sites on other adults, the more willing people will be to censor these web sites.

H2b: The greater the perceived effect of commercial web sites on teenagers, the more willing people will be to censor these web sites.

Methodology

Data were collected in a large Midwestern city during the summer of 2000. Overall, 184 adults were interviewed at an airport in a manner similar to a mall intercept technique. Ages ranged from 17 to 78, with a mean age of 39 years old. Fifty-one percent were men. As for education, 13% completed high school, about half (55%) had attended or completed college, and

32% had attended or completed graduate school. Forty-three percent came from households with an annual income between $40,000 - $79,000. One third of respondents (37%) reported an income of $80,000 and over, and 20% reported an income of less than $39,999. These demographic data suggest that the interview at the airport produced a sample that was more educated and affluent than the general population. These differences are also reflective of Internet users in general and therefore, respondents should be better able to appreciate the nature of commercial web sites. In fact, about half (51%) of respondents reported they spend half to one hour online in the average day, 26% spend more than one hour online, and 16% spend less than 30 minutes online. Only 7% don't spend time on the net. With regard to online purchasing, about half (52%) of respondents reported they purchase products or services at least once per month on the net.

Measurement

The survey instrument consisted of items to measure: (1) the third-person effect; (2) censorship attitudes toward each form of web sites; and (3) control variables including attitudinal values, media use, Internet use, and demographics. To assess the third-person effect, this study took the typical approach found in third-person effect literature. Respondents were asked in separate questions to indicate how strongly they agree or disagree that each type of web site has a powerful impact on "themselves," on "other adults," and on "teenagers." Respondents rated their level of agreement with each item using 5-point Likert scales ranging from (1) "strongly disagree" to (5) "strongly agree." Two kinds of third-person effects were measured: the difference between estimates of an impact on self versus other adults; and on self versus teenagers. To minimize response reactivity, the "self" and "others" questions on the third-person effect were randomly arranged throughout the questionnaire, though recent work has shown that question order does not alter measurement of the basic effect (Price & Tewksbury 1996).

Questions regarding each type of web site were also randomly interspersed to avoid any response bias due to the order of presentation.

Censorship attitudes toward web sites were assessed with two separate questions: one concerned attitudes toward restricting a web site (e.g., There should be restrictions on pornography on the Internet); the other concerned an outright ban on a web site (e.g., Pornography on the Internet should be banned). Responses were given on the same 5-point scale. For each type of web site, the two items showed acceptable internal consistency (α=.80 for pornography; α=.87 for violent computer games; α=.78 for auctions; α=.63 for general commercial web sites). Thus, scores from both items were aggregated for subsequent analysis.

To determine other factors that may influence people's willingness to censor commercial web sties, this study included two attitudinal variables -- religiosity and authoritarianism -- that had previously been found to influence pro-censorship attitudes. The religiosity scale was measured with four items (e.g., "I very often think about matters relating to religion") constructed by Putney and Middleton (1961). The authoritarianism scale was assessed with ten items (e.g., "Obedience and respect for authority are the most important virtues teenagers should learn") developed by Altemeyer (1996). Both scales had acceptable internal consistency with an alpha of .84 for the religiosity and .75 for the authoritarianism. For each scale, individual items were summed for further analysis. As for other attitudinal variables, innovativeness and general attitude toward web sites were included because they were expected to have a negative relationship with pro-censorship attitudes toward controversial web sites. The innovativeness scale was estimated with six items (e.g., "I like to experiment with new ways of doing things") and had an alpha of .70. The attitude toward the web in general was measured with nine items (e.g., "Commercial web sites are the best place to get information about products and services), part of which were adopted from the Attitude Toward the Site (Ast) scale developed by Chen and

Wells (1999). Cronbach's alpha of this measure was .74. For each scale, individual items were summed for further analysis.

To control for personal experience with web sites, respondents were asked to indicate how much time they spend online in the average day and how many times per month they purchase products or services on the net. Media use was measured by indicating the amount of local and national TV news watching and the amount of newspaper reading per week. A political ideology from conservatism to liberalism and political involvement were also assessed using 5-point Likert scales. Finally, demographic variables such as gender, age, education, and family income were included.

Results

Hypotheses 1a and 1b stated that respondents would perceive commercial web sites to have a larger impact on others than on themselves. To test these hypotheses, paired t-tests were run for each type of web site. Overall, a significant third-person perception was found for all four sites. Significant effects were found when the comparison group was other adults or teenagers (see Table 1).

[Insert Table 1 About Here]

Pornographic web sites showed the largest disparities between the estimated effect on self versus others. The estimated impact on other adults was 1.81 points higher than on self ($t=16.25$, $p<.001$) and the estimated impact on teenagers was 1.94 points higher than on self ($t=18.06$, $p<.001$). Internet game sites, auction sites, and commercial web sites in general produced comparatively smaller discrepancies between the estimated impact on self versus others. For Internet game sites, the gap in the perceived impact between self and other adults was 1.22 points ($t=12.94$, $p<.001$) and the gap between self and teenagers was 1.61 points ($t=15.27$, $p<.001$). The difference between the estimated impact on self versus other adults was 0.94 points for

Internet auction sites (t=9.75, p<.001) and 1.03 points for commercial web sites in general (t=11.25, p<.001). When comparing impact on self with that on teenagers, the difference was 0.72 points for Internet auction sites (t=6.75, p<.001) and 1.05 points for general commercial web sites (t=10.48, p<.001).

Hypotheses 2a and 2b posited that the third-person perception of commercial web sites would lead to people's willingness to censor these web sites. To test these hypotheses, regressions were conducted for each type of web site (see Table 2). The impact of the first- and third-person variables was analyzed individually (Stenbjerre and Leets 1997). Overall, the findings supported the link between the third-person effect and pro-censorship attitudes toward commercial web sites. The third-person variables combined with the first-person variable explained from 14% to 41% of total variance in a willingness to censor these web sites.

[Insert Table 2 About Here]

For all four types of web sites, the perceived impacts on other adults (β=.37 for pornography; β=.29 for violent game; β=.28 for auctions) and teenagers (β=.31 for pornography; β=.41 for violent game; β=.21 for auctions; β=.34 for general commercial web sites) appeared to be strong predictors in explaining pro-censorship attitudes. One exception is that, for general commercial web sites, the perceived effect on other adults was not significantly related to censorship attitudes (β=.07, ns). As expected, the perceived effect on self was not linked to censorship attitudes toward Internet game sites (β=.01, ns) and commercial web sites in general (β=-.10, ns). Notably, for pornography and auction sites, the estimated impact on self showed a negative relationship with a willingness to censor these sites (β=-.19, p<.01 for pornography; β=-.25, p<.001 for auction). These findings indicate that the larger the estimated impact of auction sites on self, the less willing people are to censor these sites. People may consider that pornographic and auction web sites influence give an impact on themselves, but this impact is not perceived as potentially negative. Thus, there is little personal need to censor these web sites.

To identify if the third-person effect was still predictive of censorship attitudes after controlling for possible confounding variables, hierarchical regression analyses were performed (see Table 3). A total of seventeen independent variables were grouped into six separate blocks. Demographic (gender, age, education, and income), orientational variables (media use and political orientation), and attitudinal variables (religiosity, authoritarianism, attitude toward the web, and innovativeness) were entered in the first three blocks. Internet use was included in the fourth block, the first person variable was entered fifth, and finally the two third-person variables were entered in the sixth block. This approach provided the most conservative test possible and ensured that any effects attributed to third person variables would not be due to their relationship with other factors related to censorship attitudes.

[Insert Table 3 About Here]

The full model explained from 37% to 64% of total variance in an individual's willingness to censor commercial web sites. After controlling for all other confounding variables, the estimated impacts on the third-person variables remained stable. The results demonstrated the robustness of theoretical link between the third-person perception and pro-censorship attitudes.

For pornographic web sites, the estimated effect on teenagers remained a significant predictor of censorship attitudes ($\beta=.28$, $p<.001$), while the estimated effect on other adults didn't appear to be a significant predictor ($\beta=.07$, ns). The perceived effects on both types of others explained an additional 8% of the total variance. Consistent with prior results, the perceived impact on self was negatively associated with censorship attitudes, but didn't reach significance ($\beta=-.11$, ns) after controlling for other variables. Demographics, orientational, and attitudinal variables accounted for 19%, 16%, and 19% of the variance, respectively. But Internet usage did not significantly explain people's desire to censor. Women were more willing to restrict pornographic web sites than men (β=-.23, p<.001). Highly authoritarian people were more inclined to limit pornography sites (β=.33, p<.001). With regard to political ideology, more conservative people had a higher tendency to censor these web sites (β=-.13, p<.05). People who spend more time on the Internet are less likely to regulate these web sites (β=-.12, p<.05).

In the case of web sites promoting violent games, the estimated effect on teenagers remained a significant predictor of censorship attitudes (β=.26, p<.001), but the estimated effect on other adults didn't emerge as a significant predictor (β=.10, ns). The estimated impact on the third person variables explained an additional 8% of the total variance. The estimated impact on self was not associated with censorship attitudes (β=.08, ns). Demographics, orientational, and attitudinal variables explained 26%, 9%, and 18% of the variance, respectively. Women were more willing to censor these sites (β=-.22, p<.001); older people tended to restrict these sites (β=.18, p<.05). The amount of TV news watching had a positive relationship with attitudes censoring violent game sites (β=.16, p<.05). Authoritarianism appeared to be a significant predictor of censorship attitudes (β=.30, p<.001).

With regard to online auction sites, the estimated impact on other adults continued to be significantly related to censorship attitudes after accounting for other confounding variables, while the estimated impact on teenagers approached a marginal significance (β=.20, p<.10). The third-person effects on others explained an additional 12% of the variance, beyond that explained by the five previous blocks. The estimated impact on self consistently had a negative relationship with censorship attitudes (β=-.26, p<.01). Demographics, orientational, and attitudinal variables accounted for 7%, 5%, and 9%, respectively. Interestingly, people with the more favorable attitudes toward the web in general were more reluctant to censor Internet auction sites (β=-.21, p<.05).

For general commercial web sites, similar with prior findings, the perceived effect on teenagers remained a significant predictor of censorship attitudes (β=.27, p<.001), while the perceived effect on other adults was not related to censorship attitudes (β=.03, ns). The perceived effect on other adults and teenagers explained an additional 6% of the variance. No significant relationship was found between the perceived effect on self and censorship attitudes (β=.10, ns). Demographic, orientational, and attitudinal variables explained 13%, 5%, and 18%, respectively. Women (β=-24, p<.01) were more likely to regulate these sites than were men; more authoritarianism people tended to favor regulations of these sites (β=.38, p<.001). The attitude toward the web in general showed a negative relationship with censorship attitudes (β=-.32, p<.001), indicating that people how have more favorable attitudes toward the web are less likely to censor these sites.

Conclusions and Discussion

This study found a significant disparity between the perceived effect of commercial web sites on self and others and further provided additional support for the theoretical link between the third-person perception and censorship attitudes. These findings extended the conclusions drawn from traditional media content to a new medium -- commercial web sites --, enhancing the external validation.

Most of the findings were largely similar across four web sites, some differences are worthwhile discussing. Public support for censorship showed significant differences across the four web sites under study. Respondents showed greater support for censoring pornography and violent game web sites, while they were less supportive of restricting general commercial web sites and online auction sites (*M*=7.30 vs. *M*=6.64 vs. *M*=4.60 vs. *M*=4.07, F=166.69, p<.001).

Greater support for regulation of pornography and violent game sites may stem from belief that these sites give a harmful or negative impact on children and communities. This perceived negativity of these sites mirrors current debates regulating sexual and violent materials on the net. Less support for censoring commercial web sites in general and auction sites in particular may be due to their perceived commercial benefits. Commercial web sites and auction sites provide a new mode of transaction and contribute to the rapid growth of e-commerce. People go online to search for information about products or services and buy them on the net. Also they can bid for and purchase products for a lower price than buying them from a traditional retailer or a manufacturer. People may perceive these electronic transactions as having positive social consequences.

This study found several important factors influencing a willingness to censor commercial web sites. Consistent with previous studies, women were more in favor of censoring web sites than men (Andsager 1992). Among attitudinal variables, authoritarianism was positively associated with attitudes restricting pornography, violent game, and general commercial web sites. People with low tolerance of socially deviant behaviors are more willing to regulate commercial web sites that promote controversial products or contents. General attitude toward the web showed a negative relationship with censorship attitudes toward commercial web sites in general and auction sites in particular. People with more favorable attitude about the web tend to oppose to censor commercial web sites.

After controlling for confounding variables in hierarchical multiple regressions, a few changes were detected for the third-person variables. For pornography and violent game sites, the perceived impact on other adults became a weaker predictor in explaining censorship attitudes, while the perceived impact on teenagers remained a significant predictor. These findings indicate that people are concerned about teens' easy access to web sites promoting explicit sexual and violent contents and their susceptibility to these sites. The public's motivation to shield younger online users from objectionable material on the net underlies a willingness to censor these sites. In the case of commercial web sites in general, only the estimated impact on teenagers continued to explain censorship attitudes towards these sites in both types of regression analyses. This reconfirms that teens' vulnerability to general commercial web sites, rather then other adults' one, is a major force behind support for censoring these sites. With reference to auction sites, when confounding variables were controlled, the estimated impact on other adults and teenagers remained to be important predictors in explaining censorship attitudes. Notably, the estimated impact on self continued to show a negative relationship with censorship attitudes toward auction sites. One possible explanation may be that respondents perceived that online auction sites had a powerful impact on themselves, but they did not think that the impact was negative to them. The perception of a positive benefit for themselves didn't create a desire to restrict these sites.

Altogether, as factor (s) underlying support for censoring commercial web sites, one commonality is a concern about teens' susceptibility to these web sites. The results echo with the controversy concerning the regulation of Internet content and the protection of minors, especially children and teens, from sexual and violent materials on the net (McNeely & Moorefield 1999). It suggests that the argument for censorship that most resonates with the public is a concern over the impact on younger online users.

This study provides some implications for public policy related to regulation of commercial web sites. According to the exponential growth of the Internet in commercial domains, a variety of agencies are devoted to discussing commercial harms the Internet allegedly causes to consumers, addressing possible negative consequences. The findings in this study illustrate that, when it comes to the regulation of commercial web sites, people are concerned about others' susceptibility to these sites and this biased perception serves as a major motivation to regulate them because they want to protect vulnerable others -- especially teens. It is important for policy makers to recognize this, so that they can separate the public opinion from actual effects when they make policy decisions. Though it is prevalent that people perceive that other adults and teenagers are potentially affected by commercial web sites in a negative way, this perception may not be the true reflection of the reality. It remains to be discovered whether people's perception of the negative impact of commercial web sites is a true reflection of reality or a false consensus bias. Regulations of commercial web sites to blunt further public criticism of the Internet may turn out to be unsuccessful in terms of public policy efficiency and consumer protection. The regulatory debates over the wrong side of the Internet need to be grounded on its actual effects rather than on the public's misperception.

TABLE 1
Paired t-tests of Perceived Effects of Web Sites

	Pornography Web Sites	Game Web Sites	Internet Auction Sites	Commercial Web Sites
Self vs. Other Adults				
Self	2.14	1.83	2.33	2.32
Other adults	3.95	3.05	3.28	3.35
Mean difference	1.81	1.22	0.94	1.03
t-value	16.25***	12.94***	9.75***	11.25***
df	179	182	177	182
Self vs. Teenagers				
Self	2.14	1.83	2.33	2.32
Teenagers	4.08	3.44	3.05	3.38
Mean difference	1.94	1.61	0.72	1.05
t-value	18.06***	15.27***	6.75***	10.48***
df	179	182	177	182

Mean scores ranged from (1) strongly disagree to (5) strongly agree.
* p<.05, ** p<.01, *** p<.001

TABLE 2
Regression of Censorship Scales on First- and Third-Person Effect Variables

(n=184)

	Pro-Censorship Attitude[a]			
	Pornography Web Sites	**Game Web Sites**	**Internet Auction Sites**	**Commercial Web Sites**
Effect on				
Self	-.19**	.01	-.25***	-.10
Other Adults	.37***	.29***	.28**	.07
Teenagers	.31***	.41***	.21*	.34***
Total R^2	.33***	.41***	.21***	.14***

a. High scale value represents greater willingness to censor
* p<.05, ** p<.01, *** p<.001

TABLE 3
Hierarchical Multiple Regression
Predicting Willingness to Censor Controversial Web Sites

(n=184)

	Pro-Censorship Attitude[a]			
	Pornography Web Sites	**Game Web Sites**	**Internet Auction Sites**	**Commercial Web Sites**
	β[b]	β	β	β
Demographics				
Gender[c]	-.23***	-.22***	-.12	-.24**
Age	.13	.18*	.04	.00
Education	.02	.09	-.10	-.08
Income	-.06	.02	.15	.09
$R^2 \Delta$	***.19****	***.26****	***.07**	***.13****
Orientational				
TV news	.09	.16*	-.01	.03
Newspaper	-.09	-.11	-.07	-.02
Ideology	-.13*	-.03	.06	.04
Political involvement	.00	-.04	-.16	-.10
$R^2 \Delta$	***.16****	***.09***	***.05***	***.05***
Attitudinal				
Religiosity	.10	-.09	-.04	-.06
Authoritarianism	.33***	.30***	.17	.38***
Innovativeness	.01	-.10	-.04	-.03
Attitude toward Web	-.06	-.07	-.21*	-.32***
$R^2 \Delta$	***.19****	***.18****	***.09***	***.18****
Internet Usage				
Hours on the net a day	-.12*	-.07	.08	-.03
Buy on the net[d]	-.05	.05	-.01	.13
$R^2 \Delta$	***.02***	***.01***	***.01***	***.01***
Effect on				
Self	-.11	.08	-.26**	.10
$R^2 \Delta$	***.00***	***.01***	***.03**	***.02***
Effect on				
Other adults	.07	.10	.24*	.03
Teenagers	.28***	.26**	.20#	.27***
$R^2 \Delta$	***.08****	***.08****	***.12****	***.06***
Total R^2	**.64***	**.63***	**.37***	**.44***

a. High scale value equals greater intention to censor each controversial web site.

b. Beta weights from final regression equation with all variables included.

c. Coded as 0=female, 1=male.

d. Coded as 0=never bought products on the net, 1=bought on the net in the last month.

# p<.10, * p<.05, ** p<.01, *** p<.001

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Applying the Health Belief Model to Promote Healthy Lifestyles via Television in Poland

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Applying the Health Belief Model to Promote Healthy Lifestyles via Television in Poland

ABSTRACT

This study applied the framework of the health belief model (HBM) to examine the impact of a preventive health TV program series on health knowledge and behavior. Using data from a post-test control field experiment with 151 viewers and 146 nonviewers in Poland, hierarchical regression analysis showed stronger support for the HBM factors of efficacy, susceptibility, seriousness and salience in their contribution towards health behavior among TV viewers compared to nonviewers. Cues to action variables (including TV viewing) and health knowledge boosted efficacy among viewers. Without the advantage of receiving health information from the TV series, nonviewers relied on their basic disease fears on one hand, and interest in good health on the other to take steps towards becoming healthier. A preventive health TV series can increase health knowledge and enhance health beliefs which in turn contribute to healthy lifestyles.

Key words

Health
Health belief model
Health motivation
Preventive health
Television and health

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INTRODUCTION

The Health Belief Model (HBM) has been used to investigate a plethora of health promotion behaviors -- immunizations, use of preventive dental and physicians' services, disease screenings, diagnostic tests, risk behaviors and compliance with medical advice. Its development was derived from health assessments of risk in relation to health behaviors made by U.S. public health service professionals in the 1950s and its explanatory power is predicated on two conditions. Firstly, the benefits of a recommended action outweigh its barriers and secondly, disease susceptibility and severity are high (Rosenstock, 1974). An internal or external stimulus comprising a cue-to-action prompting health behavior has been studied as a component of the HBM (Rosenstock, 1974; Janz & Becker, 1984) and health motivation has often been included as a supplementary component (Rosenstock, 1974; Ogionwo, 1973; Gochman, 1971).

The application of the HBM as a framework to assess risk factors and promote specific health behaviors has been well documented. It has been focused on in the study of coronary heart disease and prevention (Mirotznik, Feldman & Stein, 1995; Troein, Rastam & Selander, 1997). Its helpfulness in discriminating exercise behavior and participation in physical activity has been demonstrated (Dolman & Chase, 1996; Sorensen, 1997; Swift, Armstrong, Beerman, Campbell & Pond-Smith, 1995; Taggart, 1995). Its use in understanding and improving dietary behaviors has been increasing (Chew et al., 1998; Hayes and Ross, 1987; Hollis, Sexton, Connor, Calvin, Pereira & Matarazzo, 1984; Kristal, Patterson, Glanz, Heimendiger, Hebert, Feng & Probart, 1995; Kloeben, 1999; Schafer, Keith & Schafer, 1995) and it has been used to understand lifestyle behaviors such as smoking cessation and alcohol consumption (Conrad, Campbell, Edington, Faust & Vilnius, 1996; Minugh, Rice & Young, 1998). Apart from one study focused on general health (Cheng, Savageau, Bigelow, Charney, Kumar & DeWitt, 1996) little has been done to investigate its application in improving overall healthy behavior. This study proposes to investigate the application of the health belief model on overall healthy behavior promoted by a series of televised messages.

Influence of Televised Messages on Health Behavior. Television has supplanted print media as the most frequently cited source of health information (American Dietetic Association, 1995; Dan, 1987; Signorelli, 1993; Wade & Schramm, 1969). Recent research showed that, in general, mediated sources of information (television, radio, newspapers, books and magazines) were used more frequently than personal sources of information (doctors, nurses, nutritionists, dietitians, home and economists) as resources for nutrition knowledge (Chew, Palmer, & Kim, 1995). Television is able to reach large, diverse populations (Nielsen, 1998) and to stimulate healthy behavior (Belicha & McGrath, 1990; Brown & Einsiedel, 1990; Atkin, 1981; Warner, 1987) but few efforts have been successful in promoting comprehensive healthy behavior.

Research shows that mass media have succeeded in increasing factual knowledge and public awareness of health issues although they are less successful in changing established attitudes and behavior (Rogers & Storey, 1987). Regular viewing of an entertainment television program series resulted in new knowledge of as well as action regarding a chronic disease (Sharf, Freimuth, Greenspon & Plotnick, 1996). Nested messages in entertainment programs and comprehensive public service announcement (PSA) campaigns instilled the acceptance of the social norm of non-drinking or “designated” drivers (Dejong & Winsten, 1990; National Highway Traffic Safety Administration, 1993; 1995; Winsten, 1994). Mass media messages improved knowledge of cardiovascular health but were not sufficient to sustain behavior changes (Farquhar, Fotmann, Flora, Taylor, Haskell, Williams, & Wood 1990; Flora 2001; Maccoby, Farquhar, Wood & Alexander 1977). A meta-analysis of 48 health communication campaigns showed that media exposure accounted for a 7% to 10% behavioral change which was not homogenous across campaigns, thereby pointing to differences in moderator variables (Snyder, 2001).

Preventive campaigns are often considered less effective since the benefits are attained in the future rather than in the present, (Rogers & Storey, 1987). However, many have succeeded and the elements of a successful media campaign include the following -- specific attainable objectives (Mendelssohn, 1947), recommended behavioral changes which are easy to perform (Bettinghaus, 1986) and message accessibility and appeal (Brown & Einsiedel, 1990). Building on these lessons, messages developed for a television series can provide simple-to-follow self-help tips for health. Such media health messages are assuming a more significant role in communities where individuals have to start taking more responsibility for their own health and welfare as public health services downsize. Such is the case in Central and Eastern Europe in the 1990s.

Focus on Poland. In examining global epidemiological trends, international scientific and public health communities observe a disconcerting development. In general, mortality from lifestyle-related diseases in western and other industrialized nations has been declining in recent decades while the converse appears to be true in developing nations and in various Newly Independent States of the Former Soviet Union (Murray & Lopez, 1996). In the latter societies, the transition to a market economy without the necessary social support mechanisms has caused many health care systems to collapse, exacerbating the trend toward poor lifestyle and a high prevalence of CHD, cancers, and other chronic diseases.

The situation in Poland is complex. Since the 1990s, total mortality attributed to cardiovascular disease has decreased in keeping with declines in western and industrialized nations (La Vecchia, Levi, Lucchini & Negri, 1998; Zatonski, McMichael & Powles, 1991). However, cancer mortality has increased and the total cancer mortality rate of middle-aged males is one of the highest ever registered in Europe (Levi, Lucchini, Negri, Boyle & La Vecchia, 1999). Also, a rapid increase in alcohol consumption has led to a corresponding increase in alcohol-related problems (Swiatkiewicz, 1997). Consequently, steps are needed to ameliorate various lifestyle related health risks.

The World Health Organization, local governments and local and international nonprofit organizations have attempted various approaches to address the health crisis in Central and Eastern Europe. Among these, the Center for Communications, Health and the Environment (CECHE), a Washington-based nonprofit organization has engaged in prevention-oriented health promotion programs in Russia, Hungary, Poland and the Czech Republic. One major focus of CECHE's activities is the use of mass media, particularly in the form of a series of short or long television programs, intended to inform the public about self-help steps to improve their own health situations.

The present study attempts to assess the impact of one such television series, *A Family Year* on targeted health related behaviors of television audiences in Poland. Specifically, it proposes to assess the relationship between viewing a TV program series and key factors of the health belief model (HBM) that lead people to engage in healthy behavior (exercising, losing weight, changing eating habits and not smoke/quit smoking). It applies the Health Belief Model

(HBM) as a framework of analysis and assesses the contribution of various HBM factors on health behavior among TV viewers and nonviewers. In doing so it seeks to identify the relationship between the HBM factors in order to describe paths of action in health behavior using these factors as intervening variables.

Health Belief Model. In the HBM, five basic factors influence preventive behaviors (Janz & Becker, 1984; Maiman & Becker, 1974; Rosenstock, 1974). Perceived susceptibility is the first factor. This refers to a person's beliefs about the possibility of getting the disease or being harmed by the condition. The second factor is perceived seriousness of the consequences of the disease or health condition such as disability or mortality. Perceived benefits of performing the recommended behavior is the third factor and includes feeling healthier or living longer. Perceived barriers to the suggested actions is the fourth factor and may include cost, time or inconvenience. Finally, cues to action complete the model and may constitute a physician's advice, print or electronic advertisement or TV program which elicits readiness to apply preventive health behaviors. Previous researchers have also included a motivational factor (Rosenstock, 1974; Ogionwo, 1973; Gochman, 1971) which has been incorporated in subsequent studies (Chew, Palmer & Kim, 1998; Hayes et al., 1987; Mirotznik, Feldman & Stein, 1995; Schafer, Schafer, Bultena, & Hoiberg, 1993).

The HBM states that preventive health behavior results when readiness to act (presence of perceived susceptibility and perceived seriousness) and efficacy of the recommended response (perceived benefits outweigh perceived barriers) work cumulatively. Different factors or combinations of factors have produced major portions of the variation in taking preventive health steps depending on the disease, type of health behavior promoted and/or individual's situation, (Rosenstock, 1974). Two meta-analyses point to perceived barriers as the strongest predictor of health behavior (Janz & Becker, 1984; Zimmerman & Vernberg, 1994). They also found perceived susceptibility as a strong predictor.

Cues to action have been examined in relation to health beliefs and these have resulted in improved nutrition behavior (Chew et al., 1998) and smoking reduction (Mirotznik, Feldman & Stein, 1995). In the first study, researchers found that as a result of viewing a television program promoting healthy nutrition, viewers reported consuming plant foods more often and foods high in fats less often. In the second study, working in a health promoting worksite environment led to

.lower levels of smoking.

Health decision-making comprises a series of steps. At each step, interactions with individuals or events may influence the likelihood of a particular response (Rosenstock, 1974). When researchers analyzed specific factors as mediating variables in physical safety behavior, these pointed to a better understanding of the paths of action (Witte, 1993). The case has also been made in dietary behavior (Chew et al., 1998). Therefore, analyzing the impact of other factors as mediating variables and the contribution of the latter on preventive health behaviors may locate and identify opportunities for more successful intervention approaches.

In promoting healthy behavior, two additional mediators seem appropriate in the context of a recently democratized society -- health motivation and salience. The reason is because these variables provide a measure of an individual's sense of participation in and responsibility for his/her own health. Health motivation refers to a general predisposition towards health matters such that if good health is valued, health motivation becomes an important modifier in the HBM (Kegeles, 1969). It is also considered an important organizer of health beliefs and intentions (Rosenstock, 1974) and a key component of the inclination towards healthful diets (Kristal et al., 1995). It assesses the degree of involvement with health issues. When treated as a modifying variable, it has related significantly with health and safety conscious behavior (Hayes et al., 1987) as well as dietary behavior (Chew et al., 1998). Consequently, it is worthwhile investigating the extent to which it mediates perceived readiness to act and perceived efficacy of recommended healthy behaviors.

Salience characterizes how close an individual feels towards the health condition and has been shown to modify behavior (Cotugna et al., 1992). In a society where information has been centralized and tightly controlled, assessment of the benefits of and barriers to healthy behaviors, susceptibility to and seriousness of the health condition when provided by governmental broadcasting stations and agencies would be subject to scrutiny. How an individual feels towards health benefits and barriers, susceptibility and seriousness is sometimes determined by its source. Under these circumstances, salience towards health reflects the psychological distance between the good health and the individual. In previous communication research salience has been assessed by using a scaled measure to indicate the degree of closeness or distance from an event (Chew & Palmer, 1994; Ettema, Brown, & Luepker, 1983), strength of feelings (Hanneman &

Greenberg, 1979) and level of interest in a topic (Becker & Preston, 1969; Bogart, 1957; Funkhouser & McCombs, 1971). This analysis proposes to assess the impact of salience as a component of the HBM. In addition it proposes to assess the role of motivation in the HBM.

Some studies have shown that demographic and socioeconomic variables such as age, gender, education and income have modified disease prevention behaviors (Chew et al., 1998; Hayes et al., 1987; Rosenstock, 1974; Sensiba & Stewart, 1995; Taggart & Connor, 1995). This study will include sociodemographic variables in its analyses.

Study Focus. The present study analyzes the impact of a preventive health TV series, *A Family Year* on HBM factors, mediators and health behavior. In addition, it focuses on whether health knowledge increases as a result of viewing the series and how knowledge in turn functions as a mediating variable. Specifically it assesses and compares the contribution of the key HBM factors or health beliefs towards healthy behaviors among television program viewers and nonviewers in order to determine the impact of the TV series; secondly, it identifies the paths of action among health knowledge, health motivation, and cues to actions on health beliefs.

METHOD

Television Program Series. *A Family Year*, a series of five half-hour television programs was produced by Skyscraper Productions, a London-based production company with input from health promotion experts in Russia, Hungary, the Czech Republic and Poland. The series is based on material derived from several scientific reports. These include the global perspective issued by the American Institute for Cancer Research-World Cancer Research Fund (1997), the *Dietary Guidelines for Healthy American Adults* (American Heart Association, 1996), the Surgeon General's *Report on Nutrition and Health* (1988), the National Academy of Sciences report, *Diet and Health* (1989) and formative research conducted to assess the health needs of adult populations in Russia, Hungary, Czech Republic and Poland (CECHE, 1995).

The series features the scientific basis for the diet-exercise-lifestyle-disease connection, the debates and health situation in Central and Eastern Europe. It differentiates fact from fallacy, suggests practical ways to lower the risk of heart disease and certain cancers, approaches to quit smoking and increase physical activity, efforts to prevent environment pollution and tips on shopping, cooking, exercising, eating and living healthily. It focuses on four families, one from each country, tracks with them through the cycle of a year and participates in their efforts to live healthier lives -- exercise, quit smoking, shop and eat more healthily, and take steps to have a cleaner environment.

The television series was transmitted via several broadcast entities in these four Central and Eastern European countries between November 1996 through January 1998. Data assessing the impact of the TV series were collected in five metropolitan areas -- Moscow, Budapest and Debrecen, Prague and Warsaw -- with the participation of local researchers from November 1996 through July 1998. Only the Polish data will be reported in this study. An estimated viewership of approximately 141,360 Polish households tuned in each week to view the series (CECHE, 1998).

Sample. A two-stage longitudinal post-test control field study was conducted among 151 viewers and 146 non viewers aged 18 and above. Viewers living in Warsaw were randomly selected to participate in the study in two ways. First, they were invited by letter to view the televised series broadcast on Polish Television. They were interviewed in person directly after the series broadcast and six weeks to three months later. Second, a group of viewers received a videocassette of the series. They were interviewed six weeks to three months later after they had viewed at least one of the five programs in the series. Viewers watched an average of 3.36 programs out of the five in the series. About half of them (50.7%) watched 4 or more programs while the rest watched three or fewer shows. The sample reflected a quota distribution of 50% females and males with 33% young (18-34), middle-aged (35-54) and older (55-65). In addition, education was equally divided among primary school-, high school- and college-educated viewers while work status was similarly split among the employed, retired and those not working.

A demographically matched group of nonviewers was randomly recruited and interviewed at home twice, once during the time the viewers were interviewed after viewing the television series and the second time about six weeks to three months later. About 80% of the original sample participated in the second phase of the study. Technically, the study design was not a true experiment because of the lack of respondent randomization between viewer and nonviewer groups. However, this quasi-experimental design yielded similar demographic characteristics between the two groups. A majority of the viewing and nonviewing groups was 45 years and older (55% vs 56%). Females comprised 52.3% of viewers and 48.6% of nonviewers while those college degree consisted of 24.5% and 30.8% of the respective groups.

Measures. Five sets of variables derived from the HBM were measured. These included, 1) efficacy (index of benefits and barriers), 2) readiness (susceptibility separate from seriousness), 3) health motivation, 4) salience, and 5) cues to action. Health behavior comprised the dependent variable.

Efficacy. Five Likert-scale items measuring perceived benefits and perceived barriers were indexed to obtain efficacy. The questions asked respondents how strongly they agreed or disagreed with two "benefits" (healthy diet, cancer/heart disease prevention) and three "barriers" (time consuming, costly, give up favorite foods) statements. The items were scored and summed (range of 1 to 25) so that high efficacy would be represented by higher scores. Cronbach's alpha reliability coefficient for efficacy was .75.

Readiness. Two measures were used. Perceived susceptibility assessed respondents' belief that their health was at risk. The question asked whether respondents were currently considering or were on a special diet for health reasons (yes/no). Perceived seriousness was assessed by summing 8 items (yes/no) which asked whether respondents had a specific health condition. These 8 conditions included high blood cholesterol, heart disease, high blood pressure, respiratory problems, obesity/being overweight, liver damage, colon and lung cancer. A higher score (scale of 0 to 8) would indicate a higher level of perceived seriousness of the diseases/health contraindications resulting from not pursuing a healthy lifestyle.

Health motivation. This general measure assessed whether respondents felt motivated to do something about their health and comprised two Likert-scale items which asked whether respondents felt they could influence their own health and whether they felt they could do something about their polluted environment. The two items did not correlate with each other indicating that they were independent measures of motivation. They were scored and summed so that higher scores (1 to 10) reflected a higher health motivation.

Salience. This was measured using a single question assessing closeness to the topic of health. The question was, "How concerned are you about health and fitness?" on a scale of 1 (not at all concerned) to 4 (very concerned). Higher scores reflected higher salience.

Cues to action/media message. Media messages function as cues to stimulate action and previous studies have shown that the population can be alerted by newspapers, films, TV spots and other messages (Flora, Maccoby, & Farquhar, 1989; Levy & Stokes, 1987; Rosenstock, 1974; Witte, Stokols, Ituarte, & Schneider 1993). In the U.S. a plethora of health-related information is readily available to the public in newspapers, magazines, television, and advertising (Chew et al., 1995; Goldberg, 1992; Lunin, 1987; Squires, 1986). In contrast, a dearth of reliable health information exists in Poland. Thus, this analysis focused on respondents' confidence in assessing the quality of dietary information (confidence in information) and the availability of reliable information (reliable information). Two Likert-scale items (1 to 5) tapping these dimensions were, "There are so many recommendations about healthy ways to eat, I don't know what is good or bad" and "If there were reliable information and easy steps to follow, people would change their diets to lower their chances of getting heart disease and cancer." A high (disagree) score on the first item reflected respondents' confidence in their nutrition knowledge base and a high (disagree) score on the second indicated a lack of reliable information for change to follow. Exposure to the television program series was also considered a cue for action.

Health Knowledge. This measure consisted of six Likert-scale items (1-5) tapping knowledge about the relationship between eating animal fats and heart disease, consuming fruits/vegetables and cancer, regular exercise and health, heavy drinking and liver damage, environmental pollution and health, smoking and lung cancer. Scores were recoded where relevant and summed (1-30) so that higher scores reflected higher health knowledge levels. Cronbach's alpha reliability coefficient for health knowledge was .67.

Health behavior. This measure comprised four questions (yes/no) focused on healthy practices and included the following: Exercising in the past month, changing eating habits, trying to lose weight and not smoking or trying to quit smoking. Scores were summed so that a higher score would reflect healthier behavior on a scale of 0 to 4.

Sociodemographic variables. These included categories of age, education, income and gender.

Analysis. First, the mean scores comparing viewers and nonviewers on the HBM items and mediators were examined using *t*-tests. Second, percentages related to HBM items for viewers and nonviewers were assessed. Finally, the determinants of health behavior were analyzed using hierarchical regression to estimate their respective path coefficients. This statistical procedure was used to predict health behavior from perceived susceptibility and seriousness of getting diseases, perceived efficacy, health motivation, salience and sociodemographic variables. Separate regressions were computed for viewers and nonviewers because they did not comprise a naturally occurring group together. Including both groups in one analysis would be to create an artificial sample comprising approximately equal numbers of viewers and nonviewers. Additional regression analyses were run to assess the relationship between cues to action, health knowledge and the health beliefs which were significant predictors of health behavior. This was to ascertain the antecedents of key health beliefs so that paths of action can be better understood. Sociodemographic variables were also included. Tests were set at the probability level of at least $p<.05$.

RESULTS

Statistically significant differences were found between viewers and nonviewers for efficacy, susceptibility, seriousness, health motivation, the cue to action -- lack of reliable information, health knowledge and health behavior ($p<.01$ to .05). See Table 1. Viewers tended to score higher on these items compared to nonviewers. Salience was similar for the two groups (2.85 vs 2.86) and so was the cue to action – confidence in information (3.28 vs 3.10). Health knowledge was higher among viewers than nonviewers ($p<.001$).

Table 1 About Here

Tables 2 and 3 compare the results of the regression equations predicting health behavior from health beliefs, salience, motivation and cues to action for viewers and nonviewers respectively. It lists the semi-partial correlation (sr^2) or unique proportion of variance explained by a specific independent variable, its standardized beta weight (*Beta*), the correlation (R), and variance (R^2) for each of the final equations.

Table 2 About Here

In the first regression, four variables were found to significantly predict health behavior among viewers ($r^2 = .31$). In step 1, efficacy was entered with the largest *beta* (.42), $p<.001$) followed by susceptibility (*beta* =.19, $p<.001$), salience (*beta* =.20, $p<.05$) and seriousness (*beta* =.19, $p<.025$). These HBM variables were direct and substantial determinants of health behavior and accounted for a total of 31% variance. Health motivation did not contribute directly to health behavior and as a result was not examined as a mediating variable. None of the sociodemographic variables had any effect on health behavior among viewers.

In the second regression predicting efficacy among viewers, three variables were found to be significant. In all, 50% of the variance was accounted for. The cue to action -- confidence in information -- was selected first with the highest *beta* (.49, *p*<.001), followed by lack of reliable information (*beta* = .31, *p*<.001). Health knowledge was the final factor contributing towards efficacy (*beta*=.16, *p*<.025).

Age was found to be a factor mediating health beliefs. Older viewers were more likely to consider the seriousness of poor health and getting diseases (*beta*=.16, *p*<.001, variance of 15%). In addition, they were more likely to consider themselves susceptible to a medical condition and therefore were on a special diet. Those with more health knowledge were also more likely to consider themselves susceptible to a medical condition (*betas*=.30 to .32, p<.001, variance of 17%). Finally, more knowledgeable viewers rated health and fitness as more salient compared to their less knowledgeable counterparts (*beta*=.26, *p*<.01, variance of 6%).

Among nonviewers, the regression picture has only slight similarity. Only two health belief variables were significant in predicting health behavior -- susceptibility was the stronger variable (*beta* = .27, *p*<.001) followed by salience (*beta*=.24, *p*<.025). Perceived seriousness did not enter the equation as it did for viewers' health behavior. Neither did efficacy nor health motivation. A total variance of 12% was accounted for by these two health belief model variables. In further regression analyses, no significant strong single or combination of variables emerged to optimally predict susceptibility or salience.

Table 3 About Here

As a cue to action, viewing the television program series enhanced the influence of the health belief model in promoting health behavior as the health belief variables among viewers accounted for more than twice the health behavior variance compared to that for nonviewers (31% variance for viewers vs 12% among nonviewers). Four health belief variables were significant predictors of health behavior among TV viewers compared to only two among the nonviewers. Efficacy (the assessment of benefits as outweighing the barriers of actions taken) was the strongest predictor of health behaviors among viewers. This suggested that program viewing helped to provide a clear picture of the benefits resulting from and barriers preventing health behavior. Program viewing also boosted other cues to action, particularly the perception of a lack of reliable information. This variable and its counterpart cue to action, confidence in information combined with health knowledge to produce greater efficacy. Television viewing led to higher levels of health knowledge which in turn increased health salience and susceptibility.

Among nonviewers, susceptibility and salience led to the practice of health behaviors. Without the advantage of viewing the television series, these respondents relied on their health salience and disease susceptibility.

DISCUSSION

This study examined the contribution of various health belief model factors towards the practice of health behaviors in the presence or absence of viewing a preventive health TV program series. The HBM factors included susceptibility, seriousness, efficacy, cues to action, health motivation, and salience. In addition, the influence of health knowledge and sociodemographic variables were analyzed as mediating variables. The findings suggest that viewing the television program series, *A Family Year* seemed to improve efficacy, seriousness, susceptibility, health motivation and health knowledge, the perception of a lack of reliable information and the practice of health behaviors. Age was linked to susceptibility and seriousness of disease.

Overall, in the context of health behaviors such as losing weight, changing eating habits, exercising and smoking cessation, health decision-making seemed to occur in the following way. Among recipients of health information, in this case, TV viewers of the preventive health series, *A Family Year*, the first step involves a greater awareness of efficacy, susceptibility, seriousness and salience catalyzed by the factors, health knowledge, confidence in assessing dietary information, and perceiving a lack of reliable information. This seems logical because when respondents are presented with scientific health information, they not only become more knowledgeable, they are also confident in their knowledge about health guidelines and recognize the benefits of and barriers to practicing health behaviors. In addition, they realize the dearth of reliable information around them. Consequently, they acknowledge that they are susceptible to negative unhealthy behavior consequences and perceive the seriousness of negative health conditions such as high blood cholesterol, high blood pressure, obesity and the like. Good health behavior thus becomes an immediate focus in their lives.

Older viewers in Poland are more likely to perceive the seriousness of the consequences of medical conditions because these will constrain their abilities and compromise their quality of life. Compared to younger viewers, their aging bodies will require a longer recovery period. In addition, older viewers are more susceptible to getting a disease because older persons by virtue of their longevity, are subject inevitably to getting a chronic disease. Thus they are more likely to be on a special diet. It is also possible that viewing the television series stimulated viewers to become more aware of the status of their health so that the seriousness of their health condition is acknowledged and realized. This needs to be confirmed in a future study.

Among nonviewers who do not have the advantage of receiving health information, susceptibility and salience foster good health behavior. It's interesting that perceived efficacy and seriousness did not significantly contribute to health behavior among nonviewers. This could have been attributed to the lack of available health information apprising them of the symptoms of health contra-indications, the benefits of and barriers to good health.

Overall, nonviewers are not as well informed about health compared to viewers. When respondents feel a closeness to the topic of health and fitness, this translates into a general concern about health which is expressed in taking steps towards health. The HBM factor of perceived susceptibility also influences the practice of healthy behaviors. When respondents feel their health is susceptible and that they value health closely, they will practice healthy behaviors. This applies to both viewers and nonviewers.

In comparison, viewers appear to engage in good health behaviors when they have confidence in the correctness of their health knowledge. This knowledge base was conceivably supplemented and strengthened by viewing the television program about health and fitness. Arguably, program exposure promoted healthful behavior via the various mediating variables. These steps are represented in Figure 1 which displays the factors predicting healthful decision-making.

Figure 1 About Here

Four implications are proposed regarding the steps involved in healthy behavior. First, one strategy to promote healthy behavior is to increase perceptions of efficacy, susceptibility, seriousness and salience. Second, a television program series focused on preventive health can increase health knowledge and in so doing boost viewers' efficacy and salience. Third, the optimal opportunity for stimulating efficacy is to produce messages that provide respondents with information that enhances their confidence in their ability to differentiate accurate from inaccurate reports as well as help them recognize the dearth of reliable information around them. Both of these factors enhance efficacy. Finally, the television program series, *A Family Year* appeared to improve healthy behavior practices by enhancing viewer confidence in assessing health information and pointing out the lack of reliable information. The TV series also sensitized older viewers to their susceptibility to medical conditions and the seriousness of the consequences of these conditions.

Helping consumers learn and understand preventive health steps to improve their health is a tried and tested approach. Viewers scored higher on perception of a lack of reliable health information compared to nonviewers who tended to perceive that there was reliable information on health. This could have been a function of the comparatively centralized system of information in Poland. When viewers were exposed to scientifically grounded health information in the TV series, they may have become more sensitized to the dearth of reliable health information in their society. In contrast, it is interesting to note that a U.S. study (Chew et al., 1998) found the opposite result, that viewers of a scientifically grounded health promotion TV program were more likely to perceive the presence of reliable information compared to nonviewers. Therefore, more programs or a series of programs providing evidence-based health information would definitely enhance health behavior. The effectiveness of the television series *A Family Year* could be attributed to its clearly stated objectives, the presentation of easy preventive health steps (e.g. eating more fruits and vegetables and exercising regularly) and the appeal of focusing on and tracking with a family with whom viewers could identify.

A limitation of analyzing health beliefs is that beliefs evolve and may not be enduring. Previous health belief researchers acknowledged the dynamic nature of health beliefs which were modified by interactions with events and individuals (Rosenstock, 1974). Another limitation focuses on the variable nature of HBM factors measured across studies. Concepts of perceived susceptibility, efficacy, cues to action, health motivation and salience may be defined differently and consequently lack comparability. Until research studies focused on similar concepts and using similar measurements accumulate, results need confirmation.

Social desirability response bias and memory dependence are limitations of self-reported measures. The results are derived from a quasi-experiment, however, since demographically comparable respondents of viewers and nonviewers are surveyed at the same time, the nonviewer group functions as a control group in this regard and any increase or difference represents a genuine shift. The sample size of 151 viewers and 146 nonviewers is not considered a major limitation in view of the fact that this is a field experiment where 30 respondents per group would provide usable data. For perspective, it is reassuring to note that other HBM studies have been published with smaller sample sizes, for example, 57 coronary heart disease patients in Mirotznik et al. (1995), 82 smokers and 228 nonsmokers in Conrad et al. (1996), and 113 female college students in Taggart et al. (1995).

Finally, the results of this analysis are not generalizable to the general Polish population but are reflective of a sample of television viewers and nonviewers with more upscale demographics including a disproportionate number of middle-aged and older persons. The analyses provide a profile of a more upscale population which yielded useful information about the HBM, television program exposure, health knowledge and health behaviors. Further research should focus on sources of information and health behaviors among other populations and assess how specific televised messages influence health beliefs, health knowledge and health behaviors and whether the current findings are reinforced.

The study's main contribution has been its application of the health belief model with its entire array of health belief factors in assessing the influence of a television program series on health behaviors. The explanatory power of the HBM model demonstrated in a community beyond the U.S. attests to its cross-cultural sensitivity and universality. The positive results support the model's heuristic in explaining and predicting preventive health behavior. Viewing a preventive health television series was shown to enhance health knowledge, health beliefs and ultimately health behavior. Consequently, the study emphasizes that the HBM variables of efficacy regarding the benefits and barriers to healthy behavior, susceptibility, seriousness, salience and cues to action are important dimensions in promoting healthy behavior.

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Table 1. Comparison of Health Belief Model Variable Mean Scores, Health Knowledge and Health Behavior Mean Scores, and Percentages among Viewers and nonviewers

Mean Scores

Item (scale)	**Viewer**	**SD**	**Nonviewer**	**SD**	*t*	**df**
Efficacy (1-20)	15.62	4.05	14.66	3.46	2.10	268*
Seriousness (0-8)	1.08	1.28	0.72	1.07	2.57	290*
Salience (1-4)	2.85	0.65	2.86	0.55	0.11	294
Motivation (1-10)	6.12	1.46	5.67	1.32	2.77	290**
Lack reliable info (1-5)	2.41	1.07	2.15	0.85	1.57	287*
Confidence (1-5)	3.28	1.08	3.10	0.90	2.31	293
Health Knowledg (1-30)	26.52	2.39	25.40	2.39	3.94	285***
Health Behr. (1-4)	2.03	1.16	1.76	1.04	2.14	296*

*$p<.05$, **$p<.01$, ***$p<.001$

Percentages responding "yes"

Item	**Viewer**	**Nonviewer**	***Phi***	**df**
Susceptibility	19.5%	11.0%	.118	1*

*$p<.05$,

Table 2. Hierarchical Regression Predicting Health Behavior, Efficacy, Seriousness, Salience and Susceptibility among Viewers (n=151)

Health Behavior

Predictor Variables	sr^2	*Beta*	*p*
1. Efficacy	.18	.42	.001
2. Susceptibility	.10	.19	.001
3. Salience	.02	.20	.05
4. Seriousness	.03	.19	.025
	$R^2 = .31$		
	$R = .57^*$		

Efficacy

Predictor Variables	sr^2	*Beta*	*p*
1. Confidence in info	.42	.49	.001
2. Lack of reliable info	.07	.31	.001
3. Health knowledge	.02	.16	.025
	$R^2 = .50$		
	$R = .72^*$		

Table 2. Hierarchical Regression among Viewers (n=151) (Continued)

	Susceptibility		
Predictor Variables	*sr^2*	*Beta*	*p*
1. Age	.09	.32	.001
2. Health knowledge	.09	.30	.001
	$R^2 = .17$		
	$R = .42^{***}$		

	Salience		
Predictor Variables	*sr^2*	*Beta*	*p*
1. Health knowledge	.06	.26	.01
	$R^2 = .06$		
	$R = .26^{**}$		

	Seriousness		
Predictor Variables	*sr^2*	*Beta*	*p*
1. Age	.16	.40	.001
	$R^2 = .15$		
	$R = .40^{***}$		

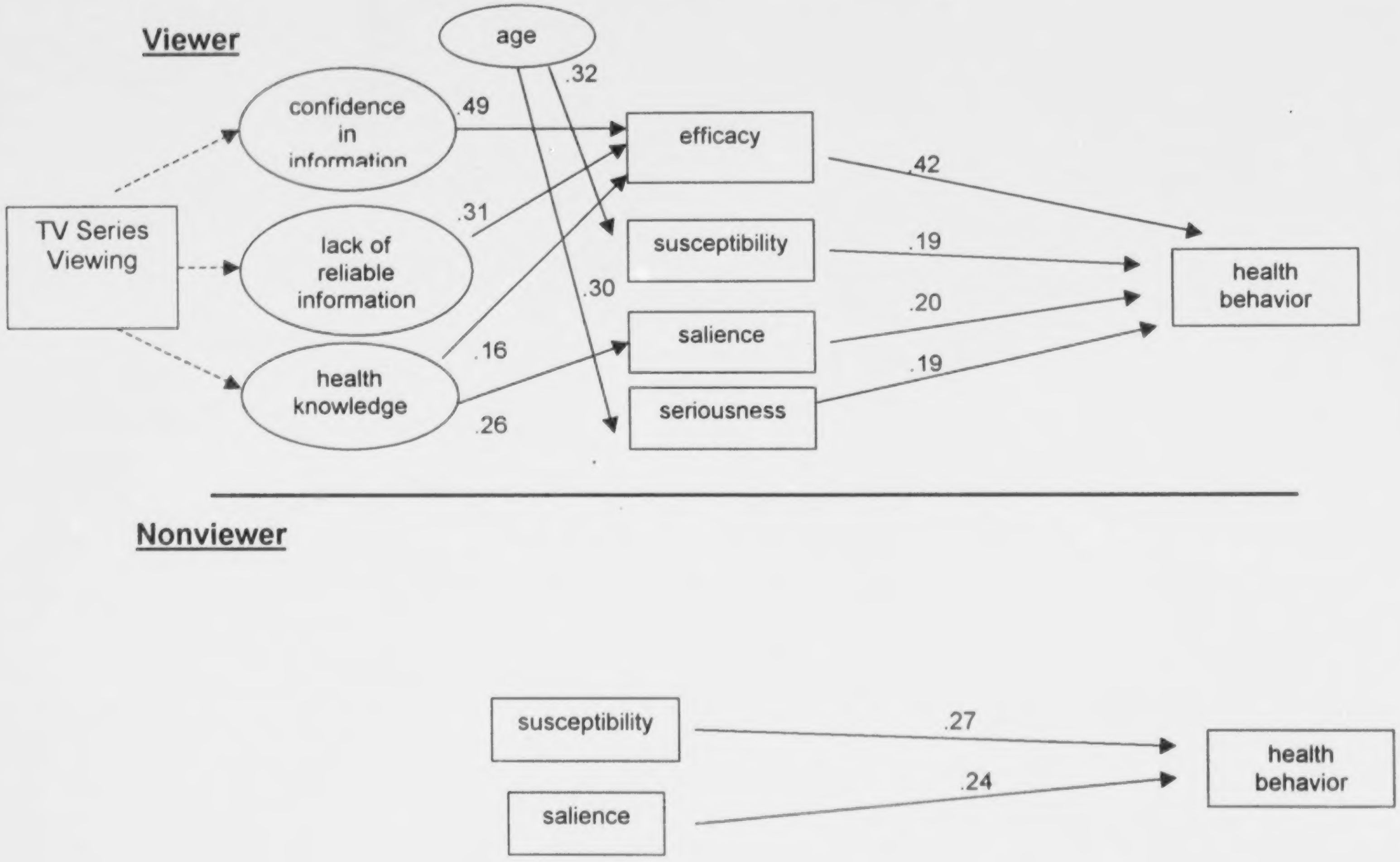
$^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

Table 3. Hierarchical Regression Coefficients Predicting Health Behavior Among Nonviewers (n=146)

Predictor Variables	Health Behavior sr^2	*Beta*	*p*
1. Susceptibility	.073	.27	.001
2. Salience	.057 $R^2 = .12$ $R = .36^{***}$	.24	.01

*** $p<.001$

Figure 1. Determinants* of Health Behavior


Viewer
age
.32
confidence in information
.49
efficacy
.42
TV Series Viewing
lack of reliable information
.31
susceptibility
.19
health behavior
.30
salience
.20
.16
health knowledge
.19
.26
seriousness
Nonviewer
susceptibility
.27
health behavior
.24
salience

* beta weights

CT+M

GLOBAL TRIADIZATION

A theoretical framework for global communication research

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GLOBAL TRIADIZATION

A theoretical framework for global communication research

Abstract / A macro theory that recognizes the world's three competing center-clusters and their respective hinterlands offers a realistic framework for global communication research. This study has used recent data on world trade, computers, Internet hosts and high-tech exports to map the triadization of the world in the Information Age. The original dependency theory and world-system theory perspectives emphasized the hierarchical linking of national societies to the capitalist world-economy in a center-periphery structure. The proposed global-triadization formulation looks at the center-periphery structure in terms of a capitalist world-economy dominated by three competing center economic clusters, each of which has a dependent hinterland comprising peripheral economic clusters. These clusters may not necessarily be geographically contiguous. Strong-weak relationships may exist within each center-cluster, as well as within each periphery-cluster, with one center-cluster occupying a hegemonic role. The rudimentary Information-Society Power Index, constructed for this study, can guide the researcher to test an abundance of hypotheses on the pattern of global communication and information flow with particular attention to source, message, channel, and receiver.

Keywords / Computer-power, high-tech manufacturing, Information Society Power Index, triadization, world system.

[MS: 13,000 words]

The Digital Revolution has reinforced the notion of the global village (McLuhan & Fiore, 1968; Mumford, 1975) or the global metropolis (Fortner, 1993). The recognition of the process of globalization has drawn attention to the shortcomings of the theories that scholars have so far used to study global communication—a concept that is distinct from but often confused with inter-national communication. The "developmentalism" notion of the Parsonian structural-functionalist modernization paradigm, which presumed that nation-states changed in parallel lines from tradition to modernity, influenced the work of many inter-national communication researchers until the mid-1970s. Researchers also have paid attention to other communication phenomena associated with globalization—transborder data flows, cultural imperialism, media events, global network organizations, etc.—though many of those "studies have generally failed to take a global perspective" (Monge, 1998, p. 143). Changes in the global power structure, attributable primarily to the ongoing globalization process fanned by the Digital Revolution, require us to reformulate and refine relevant aspects of these approaches.

The purpose of this essay is to develop a theoretical framework for global communication research based on a reformulation of the world system perspective. Gunaratne (2001a) has broadly explained the potential for testing global-communication hypotheses within the five components of Frank's interpretation of the world system[1] (Frank & Gills, 1993): the world system itself; the process of capital accumulation as the motor force of (world system) history; the core-periphery structure in and of the world system; the alternation between hegemony and rivalry; and the long and short economic cycles of alternating ascending phases and descending phases. Several excellent overviews of the literature spawned by the world-systems perspective already exist (e.g., Wallerstein, 1979; Shannon, 1989; Axford, 1995; Chase-Dunn & Grimes, 1995; Frank, 1998). Therefore, this essay will focus primarily on the more recent literature on the subject.

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[1] Differences exist between Wallerstein's modern world-systems (plural and hyphenated) perspective and Frank's world system (singular and unhyphenated) perspective. Frank (2000) points out that his formulation is humanocentric and global whereas Wallerstein's is highly Eurocentric. Wallerstein (1979) has traced two world-systems up to now: world-empires (unified political systems that have existed since the Neolithic Revolution, e.g., Byzantium, China, Egypt, Rome, feudal Europe, feudal Japan), and world-economies (marked by a single division of labor but no overarching political structure). This essay retains world-systems, as well as world system, to express distinct intents.

Literature Review

The structure of the basic argument of the world-systems perspective, according to Goldfrank (2000), is that capitalism is a world-economy comprising "core, peripheral, and semi-peripheral productive regions integrated by market mechanisms which are in turn distorted by the stronger of the competing states, none of which is strong enough to control the entire economy" (p. 178). Wallerstein's (1974) formulation of this perspective was a synthesis of continental historicism, Third World radicalism, and Marxism. Wallerstein borrowed the core-periphery concept from the dependency theory (see Gunaratne & Conteh, 1988) formulated in the 1950s by Paul Baran (1957)—and later elaborated by the likes of Samir Amin, Fernando Henrique Cardoso, Theotonio dos Santos, Arghiri Emmanuel, Andre Gunder Frank, Anibal Quijano, and Dudley Seers—and added the concept of the semi-periphery.

The world-systems theory is a socio-historical approach that sees the world "as developed and underdeveloped states, or zones, the interaction of which, through unequal exchange processes, produces a global core-periphery division of labor" (Bergesen, 1990, p. 67). It uses totalities as units of analysis to describe social change. It postulates the capitalist world-economy as the basic unit of analysis. Trade and exchange constitute the primary social mechanism that integrates the global system. Bergesen criticizes the world-system theory, as well as the international-relations theory in political science, because "both begin with the individualist assumption that we begin with an aggregate of states and then move toward international order, rather than the collectivist assumption that we begin with an international order and only then derive the presence of states and national economies" (p. 68). Bergesen says that the world-systems approach should "place culture and power at the heart of the analysis and replace the individualism implied in the idea of a division of labor, unequal or not" (p. 80). Bergesen's suggestion confirms the need for global-communication research to emphasize the global framework rather than the atomistic nation states.

The structural-functionalist modernization paradigm, which owed much to Talcott Parsons and his followers, occupied the center-stage of social science inquiry, including inter-national communication research, until the mid-1970s. This is when Wallerstein's (1974) world-systems perspective forced social scientists to re-conceptualize their approach. The developmental or modernization paradigm had de-emphasized the hierarchical location of states in a center-periphery world structure wherein the winners were the few who accrued the benefits of unequal exchange. The clash of the two paradigms shifted attention from the nation state to the world system as the relevant unit of analysis. Employment of this broader analytical unit helped explain not only the historic North-South inequality but also the rise of the newly industrialized countries. However, Schramm and Lerner (1976), two of the pre-eminent communication scholars at the time, failed to assess the significance of the world-system perspective's epistemological challenge when they edited their book on re-thinking communication and change. Many contemporary developmental-communication scholars (e.g., Shah, 1996) also continue to exclude the world system perspective, while a few (e.g., Servaes, 1999) have attempted to incorporate it. In general, this perspective has not yet received adequate attention in most discussions on communication theory as a field (e.g., Craig, 1999; Baran & Davis, 2000). Monge (1998) laments that only a "small fraction of communication scholars" have adopted a global perspective (p. 143). This fraction includes Barnett and his colleagues (e.g., Barnett, 2001; Barnett & Choi, 1995; Barnett, Jacobson, Choi, & Sun-Miller, 1996; Barnett, Salisbury, Kim, & Langhorne, 1999; Choi & Ahn, 1996, 1994; Fuentes-Bautista, 1999; Kim & Barnett, 1996; Sun & Barnett, 1994).

McMichael (2000) points out that over the last three decades the study of development has undergone several reformulations: "from basic needs, through participation in the world market, globalization, to local sustainability" (p. 668). The world-systems perspective saw development as a systemic process, "where core-periphery relations were the real development dynamic and core states were outcomes, rather than units, of development" (p. 669). McMichael contends that the accelerated compression of time and space in the current era of "financialization" has helped transform nation states into global states, a phenomenon synonymous with the decomposition of wage-labor as a social institution. This interpretation provides a challenge to researchers engaged in the study of communication and development, as well as the global flow of information. Teivainen (2000) argues that to face the political and theoretical challenges of the futures of the world system, scholars must redraw the modernist map of political space (i.e., the territorialist and single-perspectival conception of social space) used by the traditional world-systems approach. He says: "To rely on the meaning of 'politics' as something that necessarily deals with state governments is becoming increasingly restrictive in our transnationalizing world" (p. 706). The identification of transnationalization within the core-periphery structure offers another challenge.

Sklair (1999) asserts that the process of globalization has made it difficult to study many contemporary problems at the level of nation states, that is, in terms of each country and its international relations. Instead, researchers need to conceptualize such problems in terms of global processes. However, Sklair points out the clear need to establish a distinction between the international and the global. He categorizes globalization studies into four research clusters: the world-systems approach, the global culture approach, the global society approach, and the global capitalism approach. He argues that the global capitalism approach is the most productive for theory and research in globalization. (Frank's world system model may well fit into this category because it analyses historical developments by linking global capitalism—the motor force of the world-economy—to the beginning of history.) Assessing the strengths and weaknesses of each of these approaches, Sklair observes (p. 158):

- The world-systems model tends to be economistic (minimizing the importance of political and cultural factors), but as globalization is often interpreted in terms of economic actors and economic institutions, this does seem to be a realistic approach.
- The globalization of culture model, on the other hand, tends to be culturalist (minimizing economic factors), but as much of the criticism of globalization comes from those who focus on the negative effects of homogenizing mass media and marketing on local and indigenous cultures, the culturalist approach has many adherents.
- The world society model tends to be both optimistic and all-inclusive, an excellent combination for the production of world-views, but less satisfactory for social science research programs.
- The global capitalism model, by prioritizing the global capitalist system and paying less attention to other global forces, runs the risk of appearing one-sided. However, the question remains: how important is that "one side" (global capitalism)?

Chase-Dunn (1999), who discusses the trajectories of several types of globalization over the last 100 years within the world-systems perspective, contends that a lag exists between economic and political/cultural globalization. He observes that the latter needs to catch up if we were to convert the "casino capitalism" into a more humane, democratic, balanced, and sustainable world society. Chase-Dunn's observation offers yet another challenge to global-communication researchers to study this phenomenon.

Volkmer (1999) has called for the "reformulation or reformatting of existing concepts of international communication" to develop a new theory of global communication that would encompass the "various global movements in shaping the diverse, and … continuously diversifying global communication processes" (p. 2). Gunaratne (2000, 2001b) has asserted that the "New Global Age" requires more refined global (or macro-level) theories to dissect the reality of the world as an interconnected unit. Chang, Lau, and Hao (2000) have attempted to incorporate various theoretical approaches in inter-national communication research into the world-systems perspective. Although micro-level and mid-range theories have their uses, a clear need exists to use and refine macro-level theories in the age of globalization. The process of globalization has pushed the world's most competitive countries into more powerful economic groupings in the quest for greater capital accumulation in the new informational economy. Although the Digital Revolution has further consolidated those entrenched in power and weakened those in the periphery, it has also, as Castells (1996) points out, enabled a cluster of nations in the Asian Pacific to emerge as a powerful player in the global economy. The categorization of nations per se into a center-periphery dichotomy may not be adequate in the light of the emergence of clusters of nations as powerful economic units, as well as of the emergence of powerful "digital orchards" within peripheral nations.

As already documented, contemporary scholars have gone well beyond the ideas of Braudel (1967) and Wallerstein (1974) who broached the idea that a world economy—an economy wherein capital accumulation proceeded throughout the world—prevailed in the West since at least the 16th century.[2] Wallerstein (1979) argued that capitalism as "a system oriented to capital accumulation per se" (p. 272) began in the 16th century. The coexistence of three antinomies—economy/polity, supply/demand, and capital/labor—defined the dynamics of the capitalist system. Economy was a world structure while political activity came within state structures. World supply was a function of market-oriented "individual" production decisions while world demand was a function of "socially" determined allocations of income. Capital accumulation occurred through appropriating surplus produced by labor while the role of labor in production diminished with greater capital accumulation. A principal outcome of these antimonies was "unequal exchange," the redistribution of surplus value from the periphery to the core (p. 373).

Frank and Gills (1993) discarded the Eurocentric approach of the world-systems theory and adopted a humanocentric approach to socio-historical analysis arguing that a world economy has been in existence for 5,000 years. Frank (1998) used his "globological" perspective (i.e., working from the whole world inward) to document that Asia—particularly China and India, not Europe, "held center stage [of the world economy] for most of early modern history" (p. xv)—about A.D. 1400-1800. He claimed that the Eurocentrism of Marx, Weber, Toynbee, Polanyi, Braudel, Wallerstein, and most other contemporary social theorists was "really ideological" and "anti-historical/scientific" (p. xv). He lamented, "What is still most amiss among contemporary historians and social scientists is a holistic perspective" (p. 33). Castells (1996) pointed out a significant distinction between a world economy and a global economy, stating that the latter signified "an economy with the capacity to work as a unit in real time on a planetary scale" (p. 92).

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[2] Hier (2001) claims that the initial architect of the world-system perspective was Oliver Cox, who produced a trilogy of volumes on capitalism in 1959, 1962, and 1964 tracing the roots of the capitalist system to medieval Venice.

Triadization: Louch, Hargittai and Centeno (1999) draw our attention to three dominant interpretations of the process of global interdependence: interdependent globalization (the universal model), civilizations and empires (the clustered model), and hegemonic globalization (the hegemonic model). The universal model presumes a generic and system-wide increase in reciprocal ties between countries. This has been the largely accepted assumption behind much of the discussion of increasing inter-connection. The clustered model presumes an increasing concentration of communication within clusters of countries united by a common cultural heritage[3] or congruent to ex-imperial links, historical flows of trade, and contemporary financial flows. This perspective recognizes clustering around the three major powers—the United States, the European Union, and Japan. The hegemonic model presumes the increasing centrality of a small core of rich countries, perhaps dominated by a single power. This view sees globalization as merely an acceleration of the concentration of resources and influence in **European** and **North American** clusters with some limited **East Asian** additions.

Global communication research stands to gain by assessing all three of these models and their various permutations. Louch, Hargittai, and Centeno (1999), who tested international telephone traffic from 1983 to 1995 as a measure of "globalization," found little evidence to support the universal model. Their standardized data showed that the propensity to call had remained remarkably stable over the selected period. However, they found a clear hierarchy of telephone contact mostly concentrated in the wealthiest countries with poorer countries being either marginalized or linked asymmetrically to a cluster of the wealthiest. They also found that the

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[3] This model includes Huntington's (1996) concept of a world system of competing civilizations. Research related to this concept is scheduled to appear in a forthcoming issue of American Behavioral Scientist, which has already released a special issue devoted to mapping globalization (Hargittai & Centeno, 2001). Huntington foresees a "clash of civilizations" with the greatest threat coming from Islam and then China. Frank (1998) dismisses such concepts as "divisive ideological diatribes … [that] have their intellectual roots in ignorance or denial of a single global history" (p. 359).

United States had consolidated itself as the "center" with the further weakening of Europe's relative position. These findings, in our view, justify a new formulation combining the characteristics of the clustered and the hegemonic models.

In an earlier study, Barnett and Salisbury (1996) traced changes in the international telecommunications network from 1978 to 1992 to examine the process of globalization. Consistent with the world-systems perspective, they found that relations among the nations in the international communication network remained relatively stable over this period in spite of changes in the transition into an information-based economy. Their findings were similar to those of Smith and White (1992), who also found the underlying core-periphery dimension in the world commodity trade flows. At the center were the **United States**, **Western Europe**, and **Japan**; at the periphery were the less-developed countries in Latin America and Africa; and between these two groups were nations generally classified as semiperipheral. This global power configuration, which some scholars identify as "**triadization**" (Thussu, 2000, p. 77), offers a most tempting meta-theoretical basis for global communication analysis. Mattelart (1996/2000) also identified the construction of the large free-trade economic blocs around the triad powers—North America, East Asia, and the European Union—as "a major change that has contributed to the creation of new divisions in the world" (p. 98). Bergesen and Sonnett (2001), who analyzed the Global 500, found a very clear three-way split between Asia (29 percent of the firms), Europe (34 percent), and the United States (33 percent), "suggesting a tripartite geopolitical division of the world economy" (p. 1603). Earlier, Galtung and Vincent (1992) had gone to the extent of demarcating the mainly Buddhist-Confucian countries in East Asia and Southeast Asia as a separate world with Japan at the top, and the Four Tigers—South Korea, Taiwan, Hong Kong, and Singapore—in the second tier. The triadization concept also ties in with the socio-historical analysis of Frank (1998) who points out that "the globe-encompassing world economy/system did not have a single center but at most a hierarchy of centers" even though a single-centered structure of center-periphery relations prevailed "on intraregional and perhaps on some interregional bases" (p. 328). Frank (1998) also disputes the existence of "semiperipheries" in Wallerstein's sense.

However, some network analysts have disputed the presumed triadization. Barnett and colleagues, who have conducted several international studies on selected aspects of communication—monetary, telecommunication, transportation, and trade flows (Barnett, Salisbury, Kim, & Langhorne, 1999; Salisbury & Barnett, 1999; Barnett, Choi, & Sun-Miller, 1996; Choi & Ahn, 1996; Barnett & Choi, 1995), news flows (Kim & Barnett, 1996), and telephone networks (Sun & Barnett, 1994)—have concluded that overwhelming empirical findings do not support a triadic world system but a tightly connected group centered on the G-7 countries. Straussfogel (1997), a geographer, on the other hand, describes "the modern world-system as a hierarchically organized complex social structure [comprising] multiple layers of nested and overlapping, cooperating and competing subsystems linked through a variety of types of nonlinear relations" (p. 123). She has proposed the merging of Prigogine's theory of dissipative structures (Prigogine & Stengers, 1984) with world-system theory to derive a framework that is able to account for a large number of spatial and temporal events throughout the history of capitalism.

Castells (1996), a sociologist, explained that the new global economy was the outcome of the "interaction between the rise of informationalism and capitalist restructuring" (p. 145). Its characteristics, he said, were interdependence, asymmetry, regionalization, increasing diversification within each region, selective inclusiveness, exclusionary segmentation, and variable geometry (p. 106). Furthermore, he asserted that the architecture of the global economy reflected "an asymmetrically interdependent world," a triad area comprising three major economic regions:

North America, with Latin America as its hinterland—even though MERCOSUR (Argentina, Brazil, Paraguay and Uruguay) exported more to Europe than to North America, and Chile exported increasingly to Asian Pacific; **Western Europe**, with Eastern Europe, Russia and South Mediterranean as its hinterland; **Japan and the Asian Pacific** (plus Australia and New Zealand), with the rest of Asia, including the Middle East, as its hinterland. Castells placed the Russian Pacific, Eastern Siberia and Kazakhstan also in this hinterland. He called Africa the marginalized region even though South Africa could be the magnet for the region's resurgence. Castells (1996) wrote:

> Around this triangle of wealth, power, and technology, the rest of the world becomes organized in a hierarchical and asymmetrically interdependent web, as different countries and regions compete to attract capital, human skills, and technology to their shores (p. 101).

This "regionalized global economy," Castells (1996) explained, was the result of "the complex interaction between historically rooted political institutions and increasingly globalized economic agents" (p. 102). However, this was not a "planetary economy" because its actual operation and structure concerned only segments of economic structures, countries, and regions, in proportions that varied "according to the particular position of a country or region in the international division of labor" (p. 102). Furthermore, the newest international division of labor was built around four parts in the global/informational economy: producers of high value, based in informational labor; producers of high volume, based on lower-cost labor; producers of raw materials, based on natural endowments; and redundant producers (or devalued labor). These positions, Castells said, did not coincide with countries. They were organized in networks and flows, using the technological infrastructure of the informational economy. The products of the new technology industries were information-processing devices or information processing itself (p. 67)

Castells (1996) castigated the world-systems theory as "simplistic" because it made little analytical sense to compartmentalize the deeply asymmetric global economy into a center, a semiperiphery, and a periphery. He argued that the world has several "centers" and several "peripheries" characterizing the "so internally diversified" North and South (p. 108). Despite Castells' criticism, a triadized configuration of the global center-periphery structure provides a more realistic framework on which to base communication research. In a recent study of 38 countries, Wu (2000) reported trade volume as the leading predictor in international news coverage. In the light of this finding, the "triadization" model offers a framework to test hypotheses on the news flow within and among the three center-clusters and their respective hinterlands.

Fortner (1993) and Hugill (1999) are among those who have examined communication phenomena within a global theoretical framework. Fortner used Innis' (1950) empire-and-communications model, which distinguished between Type 1 durable (or heavy) communication media that allowed cultures to control time, and Type 2 ephemeral (or portable) communication systems that allowed cultures to control space. Hugill looked at the geopolitics and technologies of the respective communication systems of Britain, imperial Germany and the United States as they struggled for hegemony. He applied the world-systems perspective but confined himself to the "capitalist world-system only as it has developed over the past 150 years" (p. 16). Eurocentrism, as well as his implication of capitalism as the superior "ism," differentiates Hugill from Frank and Gills, who use capitalism in a neutral sense—as the motor force of capital accumulation affecting the world as a single unit. Despite his bias, Hugill makes a useful assertion: that "in the period of multipolarity we are now entering" (p. 18), the chosen communication strategy of regional power groupings—e.g., North American Free Trade Agreement (NAFTA), the European Union (EU) and Japan-led Asia—will determine their ability to achieve hegemony. This observation further supports the notion of "triadization."

Castells (1996), as already mentioned, describes the "architecture and geometry of the informational/global economy" (p. 145) as an asymmetrically interdependent phenomenon organized around three major regions—Europe (EU and the European economies affiliated with the Organization for Economic Cooperation and Development), North America (or NAFTA) and the Asian Pacific (Japan and the "China Circle"). He identifies the G-7 countries as "the core of the system" because they accounted for 90.5 percent of high-technology manufacturing in the world (in 1990), and also held 80.4 percent of global computing power. Furthermore, he says that an economic hinterland has sprung up around each of the three major regions with Africa increasingly marginalized in the global economy.

Combining these observations of Castells and Hugill, we can use their triadization framework to empirically observe the information and communication flow among and within the three center-clusters and their respective economic hinterlands. High-technology manufacturing and computing power may serve as the criteria for measuring competitive capital accumulation under informational capitalism. The nerve center of this form of capitalism is the "global financial networks, and their networks of management," which constitute "the actual collective capitalist" (Castells, 1998, p. 363). Informational capitalism is what Tehranian (1999) calls "informatic imperialism," which, in his view, is bifurcating the globe into the "high-tech and high-growth centers" and the "disintegrating peripheries" (p. 26). Gunaratne (2001a) wrote: Where high-technology production and computing power are likely to determine competitive capital accumulation, as well as the concomitant phenomena of hegemony-rivalry and alternating economic cycles, a development approach must recognize the realities of the world/global system. Communication researchers should address this issue to help policy makers stall the proliferation of "disintegrating peripheries."

Triadization Model: The foregoing review leads us to consider the following essentials for formulating a macro-model for researching aspects related to the global information and communication order.

- Because totalities should be our units of analysis, we should begin with the "collectivist" world system (the capitalist world-economy—in effect, the modern informational economy) as our basic unit of analysis, and only then derive the presence of the "atomistic" states (Bergesen, 1990).
- The world system has three center-clusters (Bergesen & Sonnett, 2001; Castells, 1996; Mattelart, 1996/2000; Smith & White, 1993) one of which occupies the role of the hegemon (Louch, Hargittai & Centeno, 1999) while continuously competing with the other two to maintain its hegemony (Hugill, 1999). (Such competition goes hand-in-hand with cooperation in the self-interest of each center-cluster as evident in G-7 summits.)
- Each center-cluster has a dependent hinterland of periphery-clusters (Castells, 1996), and our subordinate unit of analysis should be these clusters of global states, which have so transformed from nation states as a result of ongoing transnationalization, as well as "financialization" in the informational economy (Bergesen, 1990; McMichael, 2000; Teivainen, 2000).
- These characteristics have made it difficult to study many contemporary problems, which are entangled in global processes, at the level of nation states (Sklair, 1999). However, within

this structure, we should analyze the phenomena of culture and power (Bergesen, 1990), political and cultural effects (Sklair, 1999; Chase-Dunn, 1999), transnationalization (Teivainen, 2000), financialization (McMichael, 2000), etc.

The analyses of many of these phenomena (e.g., Islamic fundamentalism, cultural imperialism, resurgence of nationalism, financial crises, etc.) must invariably go beyond the nation-state. Any formulation of the world-system structure must also accommodate the presence and impact of supranational units, such as the WTO, the United Nations and its agencies, transnational corporations larger economically than many states, as well as other regional associations of nations (e.g., ASEAN, MERCOSUR, etc.). They exist alongside the triadized center-periphery clusters as support and control mechanisms of the global capitalist economy.

Network Model: Whereas the triadization model is based on attributes of the units comprising the world system, the network model is based on relationships among those units. Hargittai and Centeno (2001) extol the virtues of applying network theory and methods to define "the underlying pattern of the literally millions of sets of ties across the globe" (p. 1552). They say network analysis enables precise and concrete means to map the relationships among regions, states, cities or even smaller units. They argue that the two-dimensional perspective reflected in the core-periphery structure based on attributes has become irrelevant "in an *N*-dimensional reality," where *N* represents the number of forms of international reactions. Categorization by attributes, they point out, may miss the "critical dynamics of global cliques" (p. 1551). Within this scheme, the core units are those that emerge as central to these global cliques. However, Chase-Dunn and Grimes (1995) say the contention that "network measures are superior to attribute measures has been argued but not demonstrated. The question of method of operationalization is always confounded with the question of the substantive content of the measures" (p. 398).

More recently, several researchers (Barnett, 2001; Kick & Davis, 2001; Sacks, Ventresca, & Uzzi, 2001; Smith & Timberlake, 2001; Townsend, 2001, Van Rossem, 1996) have followed the earlier work of pioneer network analysts to explore the dynamics of the world-system. Their analyses, accomplished through advanced statistical techniques, have yielded varying core-periphery structures depending on the variables measured. However, the United States and the top G-7 countries in Europe consistently appear as the core though Japan's appearance is inconsistent. For instance, Barnett's study of the current structure of international telecommunications based on its pattern of usage over time since the late 1970s gave Japan the 10th rank behind the other G-7 countries, as well as Netherlands, Switzerland, and Spain. Barnett also placed Sri Lanka (a Buddhist country, which he curiously identified with the regional group of Islamic nations) ahead of Singapore, Hong Kong, Taiwan, and South Korea—the East Asian Tigers that consistently moved "toward the core during the 1980s" (p. 1649).

Smith and Timberlake (2001), who studied the hierarchy of world cities based on the international flow of population by air travel, placed Hong Kong and Singapore ahead of Tokyo in 1997 while asserting that the "key cities in Western Europe and North America have continuously maintained their position as central nodes" (p. 1675) even though six or seven East Asian cities had achieved a remarkable rise in importance. Townsend (2001), on the other hand, found in the global structure of the Internet "a shift in the geography of telecommunications networks and the emergence of a network of network cities" (p. 1697). Kick and Davis (2001), who conducted a multiple-network analysis of eight types of transnational transactions (trade flows, bilateral economic aid and assistance treaties, bilateral transportation and communication treaties, bilateral sociocultural treaties, bilateral administrative and diplomatic treaties, political conflicts, armament transfers, and military conflicts) for 130 countries during 1970-1975, derived a modified world-system structure: core, semicore (capitalist/socialist), semiperiphery, and periphery. Kick and Davis concluded that the "core of Western industrial nations," including Japan, dominated the world-system across all the networks (p. 1566). No Asian-Pacific country flitted the capitalist semicore although China fitted the socialist semicore. They, however, fitted 12 Asian-Pacific countries, including the East Asian Tigers, in the semiperiphery. Van Rossem (1996), in his role-equivalence model of the world system based on the density of five networks—imports, exports, diplomatic ties, arms trade, and troops, placed highly developed small economies like Iceland, Singapore, Taiwan, and Hong Kong in the second-tier periphery, concluding that "the best proxy for world system role is absolute size of the economy" (p. 524).

An integrated model? The network model's power to analyze relationships among units constituting the world-system is a clear advantage over linear models based on attributes of those units. However, before plunging headlong into embracing network theory that will perforce limit world-system research to those adept in advanced statistical techniques, one must also be aware of its potential pitfalls, which we shall take up in the discussion section of this essay. We take the view that research based on attributes, as well as relations, would serve to validate or discard the findings derived from each method. For instance, if one were to treat the European Union as a single unit thereby omitting intra-union telephone calls from the international category, or by omitting intra-union trade from the international trade category, or by omitting intra-union air traffic from the international air-traffic category, how would the outcome of each network analysis change? Would such an approach help lessen Eurocentrism, a byproduct of imperialism so well reflected in Kipling's notorious ballad of East and West, and make world system analysis more humanocentric? (After all, geographically speaking, Europe is only a peninsula jutting out of the vast Asian continent.) Yet another poser: Would the application of network theory to ascertain the relations between the three macro-units in the attribute-based triadization model produce new insights?

Concepts and Method

Getting back to the triadization model, this study postulated the transition of the world system into the informational era by grafting the two variables computing power and high-technology manufacturing into the trade and exchange mechanism that, according to world system theorists, determined the center-periphery structure of global states/clusters. Castells (1996) identified these two as the crucial variables associated with the dominance of the center-clusters in the modern informational economy. Computing power is a prerequisite for high-technology manufacturing. The ability to compete in high-technology exports, then, determines the center-clusters, as well as the hegemon within them. This study constructed an Informational Society Power Index by combining the two variables, i.e., computing power and high-technology exports, to ascertain the relative dominance of each of the three center-clusters that "triadization" proponents deem to exist.

Computing power: Glaeser (1997) defined the computing power of a country in terms of million instructions per second (mips) per 1,000 people. However, data on mips do not exist for most countries. Therefore, this study settled on two indicators that could generate a reasonable estimate of computing power: the number of **personal computers** and the number of **Internet hosts.** Because global states/clusters can enhance their competitive edge in trade and exchange (e.g., e-commerce) through the global web of computer networks (Gereffi, 2001), the number of **Internet hosts** reflects an important facet of computing power. By combining these two sets of data through an allocation of weights this study derived a reasonably valid Computer Power Index. ITU (1999) data show that the top 10 countries (in descending rank order) own 74.3 percent of the world's total number of personal computers. To derive the number of **Internet hosts**, this study combined two sets of data: the October 2000 Netsizer estimates for 60 countries (www.netsizer.com) and the July 2000 Internet domain survey of the Internet Software Consortium (www.isc.org). It used the ISC data only for the countries not included in the Netsizer list because the latter allocates the three-letter generic Top Level Domains or gTLDs (e.g., com, net, org, edu, gov, mil) to countries on the basis of estimated registrations whereas the ISC does not. These data also show that the top 10 countries (in descending rank order) account for 87.8 percent of the world's Internet hosts.[4] Thus this study allocated a weight of 46 percent [(74.3 ÷162.1) × 100] to personal computers and a weight of 54 percent [(87.8 ÷ 162.1) × 100] to Internet hosts and added the two results to derive the Computer Power Index. The denominator of these two equations is the sum of the percentages of the top 10 in each variable (74.3 + 87.8 = 162.1). (Microsoft Excel, Microsoft Access, and Minitab were used for the calculations.)

High technology exports: This study used the 1998 high-technology exports data from the World Bank (1999), which defines such exports as "goods produced by industries (based on U.S. industry classifications) that rank among a country's Top 10 in terms of R&D expenditures" (p. 317). In simpler terms, high technology exports are products with high R&D intensity. They include aerospace products, computers, pharmaceuticals, scientific instruments, and electrical machinery (World Bank, 2000, p. 307).[5] National Science Board (2000) says that high-technology industries are important to nations because such industries are associated with (a) innovation, (b) high value-added production and success in foreign markets, and (c) spillover effects that benefit other commercial sectors by generating new products and processes. Data for the 1990s show an increased emphasis on high-technology manufactures among the major industrial countries. In 1997, production by U.S. high-technology industry accounted for nearly 32 percent of world high-technology production, and exports by U.S. high-technology industries accounted for 18.1 percent of world high-technology exports. Japan was second, accounting for 9.1 percent of exports, followed by the United Kingdom with 8.3 percent (NSB, 2000). Because the World Bank excluded the data for Taiwan, an important high-tech product exporter, this study estimated the data by deriving the average for the East Asia region. The data show that the top 10 countries (in descending rank order) accounted for 71.1 percent of the world's high-tech exports in 1998.

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[4] The top 10 countries shared 82.7 percent of the 1999 total of Internet domains, with Japan occupying the ninth rank (Zook, 2001). However, Japan occupied the second rank in the share of Internet hosts (www.netsizer.com).

[5] World Bank (1999, p. 317) identifies high-tech exports, in technical terms, as "commodities in the SITS Revision 2, Sections 5-9 (chemicals and related products, … manufactures, manufactured articles, machinery and transport equipment, and other manufactured articles and goods not elsewhere classified), excluding Division 68 (nonferrous metals)." OECD identifies four industries as high technology, based on their high R&D intensities: (a) aerospace, (b) computers and office machinery, (c) electronics-communications, and (d) pharmaceuticals.

Informational Society Power Index: This study constructed the ISPI by allocating appropriate weights to the Computing Power Index and the High-Tech Exports Index and, then, combining the two results. It allocated a weight of 53 percent to the CPI [(78.1 ÷149.2) × 100] because the top 10 countries (in descending rank order) accounted for 78.1 percent of this index; and it allocated a weight of 47 percent to the HTEI [(71.1 ÷149.2) × 100] based on the same reasoning. Thus the ISPI, just like its two derivate indexes, gives each global state/cluster a score out of 100 that reflects its power position in the triadized center-periphery structure.

Reliability and validity: Considering the conclusion of Van Rossem (1996) that the absolute size of the economy was the best proxy for world system role, we did a regression analysis of the component variables of the ISPI vis-à-vis the GNP of each economy for which relevant data were available. Our analysis yielded the following equations: R^2= 82% for GNP v high technology exports (using 1999 data for 92 economies); R^2=82% for GNP v number of Internet hosts (using 2001 data for 136 economies); and R^2=96% for GNP v number of PCs (using 2000 data for 116 economies). Thus, we can surmise that all three variables have high reliability, as well as construct validity, because they are significantly anchored to the GNP. The weights we allocated to each of these variables—the percentage share of the top 10 economies—to construct the ISPI are quite justifiable, though somewhat arbitrary, because of the remarkable dominance of these few economies over each of the three attributes.[6]

Findings

The exports-data attribute supported the "triadization" concept. (Statistical advice we received confirmed that tests of significance would make little sense because the data covered the universe.) The 1996-1999 world merchandise trade data (Table 1) provided evidence to back the notion of three center-clusters and four dependent periphery-clusters, which Castells (1996) refers to as hinterlands. The process of capital accumulation in the global material economy has generated a scenario where world trade is predominantly concentrated in the three centers: Western Europe (42 percent), Asia (22 percent) and North America (20 percent) in that order. In general, most of the Asian continent, including the Middle East, appears to be the hinterland of the **Asian-Pacific center**—Japan and a half-dozen rising economies.[7] (Almost one-half of Asia's export trade is within Asia, and almost one-half of Middle East exports go to Asia.) The Central-Eastern

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[6] DeVellis (1991) says, "Scale reliability is the proportion of variance attributable to the true score of the latent variable" (p. 24). He clarifies that construct validity is "directly concerned with the theoretical relationship of a variable … to other variables" (p. 46). As for weights, one could argue that no empirical way exists to determine weights although structural equation (or path) modeling could generate an infinity of statistically acceptable weights. Wainer and Thissen (1976) say "increased robustness can be obtained through the use of equal regression weights without severe loss in accuracy" (p. 9). The weights we have allocated are very close to equal weights.

[7] A reader of this manuscript, however, disputed this configuration on the basis of the frequency of telephone calls from the one region to the other. He wrote: "For 1997, Jordan, Kuwait, Oman, Saudi Arabia and UAE do not have an East Asian country among the top 20 nations that they call. But the United States and United Kingdom are among the top 10." Considering that 46 percent of Middle East's trade is with Asia (World Trade Organization, 1999), this may mean that the trading partners are not using telephone communication alone for trade transactions because of language problems. Middle East also has considerable trade connections with Western Europe (21 percent) and North America (13 percent). Trade data for 1997 clearly show that Japan was the No. 1 market for exports from Kuwait, Oman, Saudi Arabia, and UAE (International Monetary Fund, 1998). Telephone communication data may well be a reflection of the international language order that has elevated English as the global language, and also of the Middle Eastern diaspora in the EU and the NAFTA center-clusters.

Europe/NIS region appears to be the hinterland of the **Western-Europe center**. Because of Africa's heavy dependence on Europe for its meager world trade, Africa also belongs to Europe's hinterland. (More than one-half of the exports from the countries in Central and Eastern Europe and the Newly Independent States, as well as more than one-half of the exports of Africa, go to Western Europe.) Finally, Latin America, including the Caribbean, appears to be the hinterland of the **North-America center**. (More than one-half of the exports from Latin America go to North America.).

The Triad: This study defined the North-America center as the NAFTA cluster of global states, the Western-Europe center as the EU cluster of global states, and the Asian-Pacific center as the cluster of eight global states that topped the region's Information Society Power Index (i.e., Japan, Singapore, South Korea, China, Taiwan, Malaysia, Philippines, and Australia). These three center-clusters scored 91.2 out of the maximum possible 100 on the ISPI, thereby showing their remarkable dominance over their hinterlands (Table 2). NAFTA was the hegemon of the center-clusters with a score of 42. The EU, with a score of 26.6, was slightly ahead of the Asian-Pacific center with 22.6. Figure 1 illustrates the relative size of the three center-clusters in relation to the ISPI, as well as their relative positions on the two derivate indexes—the CPI and the HTEI.

NAFTA Center: Within the hegemon cluster, the United States stands out as the super global state with an ISPI score of 38. Canada and Mexico have relatively little power within the cluster (Table 3 and Figure 2). Because the United States beats the ISPI score of each of the other center-clusters, its influence on the entire world system becomes crystal clear.

EU Center: Three global states stand out in the EU cluster: Germany and the United Kingdom hold the lead, with France closely behind. The Netherlands and Italy occupy the middle between the Big Three and the other 10 global states of the cluster (Table 4 and Figure 3).

Asian-Pacific Center: Compared with the other two, the Asian-Pacific center-cluster is geographically not contiguous. Japan leads it with an ISPI score of 8.6 followed by Singapore (Table 5 and Figure 4). Except for Japan, South Korea and Australia, the other global states of this center-cluster do not belong to the OECD—the world's club of the rich. New Zealand, an OECD member, is not included in this cluster. Hong Kong also is not included although one could justify its inclusion as part of China. Unlike the other two center-clusters, the Asia-Pacific center-cluster is neither an economic union nor a free-trade association.

OECD: The traditional world-system perspective would most likely see the 30 member states of the Organization of Economic Cooperation and Development (OECD) as the units comprising the world's center and the semiperiphery. The Group of Seven (G-7), the world's super-rich countries, would be the center, and the remainder the semiperiphery. Our analysis shows that the OECD cluster accounts for 83.3 percent of the ISPI (Table 6).

Geographical Breakdowns: Table 7 shows the power rankings, in descending order, of each of the traditionally recognized main geographical regions. The Americas head the list followed by Western Europe, Asia-Pacific, East/Central Europe and the Newly Independent States, Middle East, and Africa. It also shows the power rankings of the sub-regions comprising each major region. Nested within each sub-region are the power rankings of each of its principal global states. The data in this table can assist the researchers who may want to redefine center-clusters and periphery-clusters.

Discussion

Although the world merchandise trade data help us identify the clusters comprising the global triad, they do not help us correctly identify the hegemon of these three center-clusters. With 42 percent of the world trade concentrated in Western Europe, one could mistakenly identify the EU center-cluster as the hegemon. (IMF data for 1997 show that 60.6 percent of EU exports went to other EU countries, 8.7 percent to NAFTA, and 7.5 percent to Asian-Pacific core. See Table 1 for the three-year average for Western Europe.) However, the Information Society Power Index, which highlights the two main resources that presumably engender power inequalities among states, enables one to identify the actual hegemon.[8] In Wallerstein's parlance, a new world-economy, which Castells calls an informational economy, has replaced the old world-economy. In our formulation of the world system, the three center-clusters would include many, though not all, of the global states that Wallerstein placed in the semiperiphery. Thus prosperous small global states too have become part of the center. This perspective differs from that of Van Rossem (1996), who placed highly developed small economies in the second-tier periphery in his role-equivalence model of the world system. However, he allowed that global states could "gain prominence in the world system through cooperation and regional alliances that pool their resources" (p. 524).

Adhering to Bergesen (1990), we began with the international order and only then derived the presence of states and national economies. Our starting point was the global trade-flow pattern, which enabled us to determine the regional clusters that dominated the world economy/system. (However, our configuration was based on the pattern of exports, not imports, because exports represent the competition for world capital accumulation. The relational data derived from network analysis would reflect both exports and imports but with inadequate attention to the magnitude of trade.) Then we hypothesized the factors—computing power and high-technology manufacturing—that enabled these clusters to compete successfully in the global informational economy. Thereafter, we looked at the pattern of distribution of the world totality of computing power and high-tech exports to construct a power index for each center-cluster and its constituent member states. Our approach of using attributes for analysis is consistent with that of historical social science that gave birth to the world-systems theory.

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[8] If one were to add up the exports and imports within the 50 states comprising the United States, just as in the case of the 15 components of the European Union, the result would also pinpoint the actual hegemon by smoothening the "inflated" share of world merchandise trade credited to the latter.

As pointed out earlier, adherents of network theory, including Barnett et al. (1999), assert that the proper approach to the analysis of structural theory uses relational data such as the frequency of communication among social systems or nation states. However, network analysis also suffers from major drawbacks. First, the lack of global data sets makes it an impractical method to uncover the historical center-periphery structure of the world economy going back at least to the beginning of the European Age (Wallerstein, 1974) or the Asian Age (Frank, 1998). Smith and Timberlake (2001) confess "the lack of data on the flows between any units of a network means that relational analysis can never adequately capture its multiplex structure in totality" (p. 1662), and the nature of network analysis made "missing data particularly problematic" (p. 1661). Second, in the absence of solid and unbiased data sets encompassing all global units, network analysis based on partial data will raise questions on validity in spite of statistically derived results on connectedness, centrality, and integrativeness. Although some good network data on commodity trade flows are available, Smith and Timberlake lament the "absolute dearth of relational data on all social phenomena" (p. 1661), i.e., compilations of networks of interactions or flows between global units. In relation to tracing communication networks, Smith and Timberlake point out that although sampling the volume of telephone calls, telex messages, faxes, telegraph, and mail is possible in principle, telephone companies "would probably be reluctant to share such information because of the possible implications for their competitive positions in the industry" (p. 1663). Third, the dearth of data available for network analysis forces researchers to operationalize research concepts to suit the availability of data thereby raising further questions on validity.[9] For instance, Kim and Barnett (1996) used the country reports of international newspapers and periodicals trade data—a very narrow category based on self-reporting—to define news flows. Again, Barnett et al. (1999) used data from a U.S.-based credit card corporation to measure global monetary flows that gave an incomplete picture of international transactions related to Japan in particular.

This study has hypothesized that the power structure of the Information Society, to a large extent, is dependent on computing power and high-technology manufacturing. However, one should be conscious that these two variables, in turn, are the consequence of a cluster of antecedent variables, such as those included in the Human Development Index (UNDP, 2000)—the real per capita income, literacy, education, and life expectancy. The emphasis placed on research and development is also a supremely important factor. The Computer Power Index constructed for this study needs further validation through a comparison with mips (million instructions per second) when such data become available for most global clusters. Furthermore, the reliability of the CPI also depends on the accuracy of the estimates of the number of personal computers and Internet hosts. This study's High Technology Exports Index also needs refinement based on a "more comprehensive notion of high technology" (Chabot, c. 1996).

This study provides the following world system perspective: The modern world-economy comprises three competing center-clusters, each of which has a dependent hinterland of periphery-clusters. The relative power of the three center-clusters is unequal. Among them is a hegemon cluster led by a global state that has more power on the world system than any other. The relative power of the global states within the center-clusters, as well as those within the periphery-clusters, is also unequal. If one were to presume that the global information and communication flow follows the pattern of this triadized center-hinterland structure, this reformulated world system perspective offers a rich theoretical framework for conducting global communication research.

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[9] Van Rossem (1996) says, "The development of better measures of world system role is made difficult not only by the conceptual confusion, but also by the poor quality and limited availability of international data" (p. 525).

Barnett and colleagues, as noted earlier, say their network analyses do not show a triadic configuration as postulated by Castells (1996), Mattelart (1996/2000), and others. Barnett and Choi (1995), however, say they found three groupings of a different kind: a Spanish-language based group that included Spain and Latin America; an English-language based group that included East and South Asia, the Middle East, Africa, Ireland, the United Kingdom, the United States and Canada; and a group comprising continental Europe, excluding France and Spain. The Barnett team's Choi and Ahn (1996) confirmed the centrality of the G-7 countries in Europe but found no evidence (Choi & Ahn, 1994) of the centrality of Japan in the Pacific Basin community. They placed Hong Kong, as the center of information flow in East Asia. Although WTO data on world trade (Table 1) clearly indicate the triadic domination of the world economy, Barnett et al. (1999) provide no explanation for this discrepancy. They assert:

> When comparing the international monetary, telecommunications and trade networks, the overall results suggest these three networks are quite similar. NEGOPY results suggest that these networks share similar core, peripheral, semi-peripheral and marginal countries. ... In spite of all the recent ideological criticisms of the world system theory ..., these research findings support the theory. ... The consistent regional patterns of organization in the three networks suggest a further anomaly in the world system theory, i.e., factors other than economic ones determine the structure of the world system. These include geographical and cultural factors. (Barnett et al., 1999, p. 43)

Barnett and Choi (1995) and Barnett and Salisbury (1996), however, did find regional clusters for telecommunication flows, as well as for international telephone use. Barnett et al. (1999) admitted that these were "somewhat at odds with world system theory" (p. 42). They said that one explanation could be that the world system may be divided into regional groupings even though "recent research has failed to confirm this finding for international trade" (p. 42). Thus these researchers concede that the world system theory needs some refinement as suggested in this essay. The present study sees the three center-clusters—NAFTA, EU, and Asia-Pacific—as the most evident structure of the contemporary world-economy. Starting from this totality, network analysis could trace relations within each cluster and among the three clusters and their hinterlands in relation to better-conceptualized research problems. Network analysis could provide new insights if it were to analyze the EU as a single economic unit rather than as 15 separate political units thereby reducing the current Eurocentric bias. Each of the three center-clusters can be analyzed similarly.

A crucial need is to answer the question: What is international communication; and should there be a distinction between mass communication and other forms of communication such as travel, tourism and migration? . Multiple-network analysis encompassing a variety of communication variables would be the most beneficial though the most difficult to do. If the triadization concept were to be incongruent with the pattern of world communication, that may indicate the need to separate the world communication or language order from the world economic order.

The work of Barnett and colleagues in the communication field need further confirmation (for validity and reliability) using all pertinent research approaches. Chase-Dunn and Grimes (1995) say "some excellent work has attempted empirically to measure the placement of states in the core/periphery hierarchy" (p. 397) using a number of research tools. The essential requirement is to move the research focus away from the atom (i.e., the nation-state) to the whole (i.e., the world system). Thus the analysis of global communication should move in descending order from the world-economy to the center-clusters and their respective hinterlands, i.e., the periphery-clusters, and only then to the global-states within each of the clusters. Researchers could redefine the center-clusters or the periphery-clusters to achieve the desired accuracy. For instance, they could expand the EU cluster (ISPI = 26.613) into a Western Europe cluster (ISPI = 28.025) by adding Western Europe's OECD states excluded from the European Union: Switzerland, Norway and Iceland.

The arrows in Figure 1 indicate the potential interrelationships between and among the various clusters. The bold double arrow-lines show the hypothetical higher information and communication flow between and among the three competing center-clusters. The thin double arrow-lines show the hypothetical higher information and communication flow between each center-cluster and its hinterland. The broken double arrow-lines show the hypothetical lower information and communication flow between hinterlands and external center-clusters. This model presumes a very low flow among the hinterlands themselves.

Within this framework, researchers can test hypotheses covering all five elements in Lasswell's (1948) transmission model: Who (Source) says what (Message) to whom (Receiver) through what medium (Channel) with what effect (Impact). Here are two examples of plausible hypotheses related to source-message-receiver elements:

- Information and communication flow within each center-cluster and its respective hinterland would be greater than the flow across competing center-hinterland configurations.[10]
- Information and communication flow from the hegemon center-cluster to each of the other two center-clusters would be greater than the flow from the remaining center-cluster. The flow to the hegemon center-cluster from the other two center-clusters favors the one that has the higher ISPI score (i.e., EU cluster).

An example of a medium-related hypothesis would be:

- Mass media density in each of the center-hinterland configurations, as well as in its component global-states, generally follows the pattern of its respective ISPI score.

The proposed model also provides a challenge to researchers who are engaged in mapping press freedom in the world (e.g., Van Belle, 2000; Weaver, Buddenbaum & Fair, 1985). The structural-functionalist modernization paradigm, which presumed that nation-states changed in parallel lines from tradition to modernity, placed media participation, with accompanying press freedom, as another facet of development. Thus it placed press freedom outside the context of the world system. Freedom House, for instance, measures press freedom using four criteria solely internal to a state: laws and regulations, political pressures and controls, economic influences, and repressive action (Sussman, 2000). Our model requires linking the notion of press freedom to global forces, such as the ability of center-clusters to flood the periphery-clusters with a barrage of information-communication notwithstanding the domestic restrictions within a state. So conceived, the measurement of press freedom should include the accessibility of information from non-domestic sources.[11] Moreover, if we were to presume the libertarian concept—"a free flow of information unimpeded by any intervention by any nation" (Hachten, 1999, p.21)—as the best expression of press freedom, then, research must also address the issue of global press freedom vis-à-vis the vast volume of government-sponsored global news flow (e.g., Voice of America, Radio Moscow, Radio France Internationale, etc.).

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[10] The aforementioned reader also pointed out that Fuentes-Bautista (1999) had examined trade and telecommunication flows in the Americas and found that trade blocs did not have an impact on regional communication, although they did effect trade. The study showed one group centered on the United States. This too points out to the need for more research by different researchers. It also suggests a need to differentiate between communication and mass communication with more widely acceptable operational definitions.

As noted in the literature review, the world system perspective also provides a challenge to developmental-communication researchers to look into the global links that limit or facilitate a nation's competitive edge in capital accumulation. The concept of developmental communication, as well as that of developmental journalism, which is predicated on the modernization paradigm, requires a thorough re-examination. Elevating the quality of journalism globally, and in the periphery-clusters in particular, may serve a much more useful purpose than a restricted brand of developmental journalism that hardly commands an audience.

Although the world system perspective is solidly based on economics, its strength depends on its ability to provide a testing ground of hypotheses associated with all other social sciences. Wallerstein (1979) maintains that history and the social sciences—anthropology, economics, geography, political science, and sociology—are just "one subject matter" that one may call "historical social science" (p. ix); and that the world-systems theory is a by-product of the application of historical social science. If economic criteria are implicitly integral to all social sciences, then the present study's theoretical approach should be eminently suitable for culture-and communication research as well. Frank and Gills (1993) assert that the world system theory accommodates scholarship in a variety of disciplines. Anthropologists (Kearney, 1995) and geographers (Straussfogel, 1997) are among the social scientists who have attempted to integrate it into their fields.

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[11] The MacBride Report (1980) attempted to place press freedom in a global context. It affirmed everyone's right to freedom of expression, which includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers, as articulated in Article 19 the Universal Declaration of Human Rights. (Note that this right belongs to the individual, not the media institutions.) The report also drew attention to the 1952 Convention on the International Right of Correction (Recommendation 48).

Relating the world-systems theory to international communication, anthropologist Kearney (1995) points out the three successive dominant paradigms in the field: the communication and development model, the cultural imperialism model, and the cultural pluralism model, "which is still exploring the dynamics of media in a world in which the distinction between centers and peripheries has largely dissolved with respect to media production and consumption" (p. 555). Global communication researchers stand to gain by adopting the world system theory to examine this issue and much more. Tomlinson (1997), for instance, sees advantages "in the recuperation of globalization within international or 'global sociology'… or in Immanuel Wallerstein's contributions to debates on global culture, framed firmly in the perspective of world-system theory" (p. 174), which may well accommodate the analysis of the postmodern condition of *compression of time and space* (Harvey, 1989), as well as *action at distance* associated with theories of structuration and the nature of modernity (Giddens, 1994).

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Table 1
Regional pattern of world merchandise exports
(based on annual average for 1996-1999)

	World	**Western Europe**	**Asia**	**North America**	*Latin America*	*C/E Europe/ Baltic/CIS*	*Middle East*	*Africa*
Origin	1996-1999 Average of Exports ($ Billions)	Percentage of exports (shown along the rows) Destination						
World	5331.75	42.1%	22.2%	20.0%	5.4%	4.1%	2.7%	2.2%
Western Europe	2322.69	**68.5%**	8.4%	8.7%	2.4%	5.3%	2.6%	2.6%
Asia	1344.57	17.5%	**48.5%**	24.8%	2.6%	1.1%	2.7%	1.5%
North America	890.44	19.1%	23.4%	**37.4%**	15.2%	0.9%	2.6%	1.3%
Latin America	278.20	14.3%	7.4%	***54.9%***	**19.3%**	1.1%	1.1%	1.2%
C/E Europe/Baltic/CIS	216.74	***50.7%***	7.4%	4.1%	1.7%	**31.8%**	2.1%	1.2%
Middle East	163.62	20.9%	***45.6%***	12.8%	1.6%	0.8%	**7.8%**	4.1%
Africa	115.96	***52.5%***	13.9%	15.4%	2.7%	1.2%	1.5%	**9.1%**

Rows show origin; columns show destination.
Boldface numbers highlight exports within each region.
Boldface italics highlight exports from periphery clusters to center-clusters.
Source: WTO Annual Report 1999 and 2000 (based on Table A7)

Table 2

Global Centers	Computer Power Index	High-tech Exports Index	Information Society Power Index
NAFTA Center	57.4769	24.5170	41.9858
EU Center	18.3091	35.9777	26.6134
Asian-Pacific Center	13.3023	33.1271	22.6200
Total	89.0883	93.6218	91.2191

Table 3

NAFTA-Center Countries	Computer Power Index	High-tech Exports Index	Information Society Power Index
United States	53.6910	19.7682	37.7473
Canada	3.0831	2.5175	2.8172
Mexico	0.7028	2.2314	1.4212
Sub-total	57.4769	24.5170	41.9858

Table 4

EU-Center Countries	Computer Power Index	High-tech Exports Index	Information Society Power Index
Germany	4.1885	7.3775	5.6873
United Kingdom	3.6339	7.4658	5.4349
France	2.1544	6.2754	4.0913
Netherlands	1.3734	4.0973	2.6537
Italy	2.3314	1.9766	2.1646
Ireland	0.1997	2.7732	1.4092
Sweden	0.9500	1.5896	1.2506
Belgium	0.6005	1.2873	0.9233
Spain	0.9080	0.6526	0.7880
Finland	0.6479	0.9409	0.7856
Austria	0.4852	0.6807	0.5771
Denmark	0.4768	0.6346	0.5510
Portugal	0.1796	0.0940	0.1394
Greece	0.1516	0.0489	0.1033
Luxembourg	0.0280	*0.0832**	*0.0540*
Sub-total	18.3091	35.9777	26.6134

* Estimated

Table 5

Asia-Pacific Center Countries	Computer Power Index	High-tech Exports Index	Information Society Power Index
Japan	6.5504	10.9770	8.6309
Singapore	0.3179	6.3449	3.1506
Korea, South	1.2767	3.5420	2.3414
China	1.8865	2.6995	2.2686
Taiwan	1.0570	*3.5538**	*2.2305*
Malaysia	0.2158	3.6389	1.8247
Philippines	0.1630	2.1898	1.1156
Australia	1.8349	0.1811	1.0576
Sub-total	13.3023	33.1270	22.6200

* Estimated

Table 6

OECD Countries	Computer Power Index	High-tech Exports Index	Information Society Power Index
United States	53.6910	19.7682	37.7473
Japan	6.5504	10.9770	8.6309
Germany	4.1885	7.3775	5.6873
United Kingdom	3.6339	7.4658	5.4349
France	2.1544	6.2754	4.0913
Canada	3.0831	2.5175	2.8172
Netherlands	1.3734	4.0973	2.6537
Korea, South	1.2767	3.5420	2.3414
Italy	2.3314	1.9766	2.1646
Mexico	0.7028	2.2314	1.4212
Ireland	0.1997	2.7732	1.4092
Sweden	0.9500	1.5896	1.2506
Australia	1.8349	0.1811	1.0576
Switzerland	0.6388	1.3933	0.9934
Belgium	0.6005	1.2873	0.9233
Spain	0.9080	0.6526	0.7880
Finland	0.6479	0.9409	0.7856
Austria	0.4852	0.6807	0.5771
Denmark	0.4768	0.6346	0.5510
Norway	0.5251	0.2188	0.3811
Hungary	0.1679	0.4507	0.3008
Poland	0.4589	0.0792	0.2805
Czech Republic	0.2037	0.2294	0.2158
Turkey	0.3595	0.0515	0.2148
New Zealand	0.3342	0.0546	0.2028
Portugal	0.1796	0.0940	0.1394
Greece	0.1516	0.0489	0.1033
Luxembourg	0.0280	*0.0832*	*0.0539*
Slovak Republic	0.0659	0.0335	0.0507
Iceland	0.0325	*0.0425**	*0.0372*
Grand Total	**88.2347**	**77.7483**	**83.3061**

* Estimated

Table 7

Region	Sub-region	Country	Computer Power Index	High-tech Exports Index	Information Society Power Index
Americas			**59.5676**	**24.9745**	**43.3088**
	North		**57.4769**	**24.5170**	**41.9858**
		United States	53.6910	19.7682	37.7473
		Canada	3.0831	2.5175	2.8172
		Mexico	0.7028	2.2314	1.4212
	South		**1.9876**	**0.4187**	**1.2502**
		Brazil	1.0081	0.2958	0.6733
		Argentina	0.3241	0.0569	0.1985
		Colombia	0.1915	0.0351	0.1180
		Chile	0.1531	0.0107	0.0861
		Venezuela	0.1362	0.0091	0.0765
		Peru	0.0637	0.0041	0.0357
		Uruguay	0.0593	0.0025	0.0326
		Ecuador	0.0308	0.0023	0.0174
		Bolivia	0.0126	0.0017	0.0075
		Paraguay	0.0081	0.0005	0.0045
	Central		**0.0754**	**0.0382**	**0.0579**
		Costa Rica	0.0235	0.0256	0.0245
		Guatemala	0.0147	0.0069	0.0110
		El Salvador	0.0124	0.0052	0.0090
		Panama	0.0123	0.0000	0.0065
		Honduras	0.0072	0.0002	0.0039
		Nicaragua	0.0053	0.0002	0.0029
	Caribbean		**0.0276**	**0.0006**	**0.0149**
		Jamaica	0.0134	0.0001	0.0072
		Cuba	0.0097	0.0000	0.0052
		Dominican Republic	0.0039	0.0002	0.0022
		Puerto Rico	0.0006	0.0000	0.0003
		Haiti	0.0000	0.0002	0.0001
Western Europe			**19.4450**	**37.5066**	**27.9339**
	Big Five		**13.2162**	**23.7480**	**18.1661**
		Germany	4.1885	7.3775	5.6873
		United Kingdom	3.6339	7.4658	5.4349
		France	2.1544	6.2754	4.0913
		Italy	2.3314	1.9766	2.1646
		Spain	0.9080	0.6526	0.7880
	Smaller Countries		**3.6290**	**10.3748**	**6.7995**

		Netherlands	1.3734	4.0973	2.6537
		Ireland	0.1997	2.7732	1.4092
		Switzerland	0.6388	1.3933	0.9934
		Belgium	0.6005	1.2873	0.9233
		Austria	0.4852	0.6807	0.5771
		Portugal	0.1796	0.0940	0.1394
		Greece	0.1516	0.0489	0.1033
	Nordic		**2.5998**	**3.3839**	**2.9683**
		Sweden	0.9500	1.5896	1.2506
		Finland	0.6479	0.9409	0.7856
		Denmark	0.4768	0.6346	0.5510
		Norway	0.5251	0.2188	0.3811
Asia-Pacific			**15.1259**	**35.5903**	**24.7441**
	East Asia		**11.2112**	**21.3226**	**15.9636**
		Japan	6.5504	10.9770	8.6309
		Korea, South	1.2767	3.5420	2.3414
		China	1.8865	2.6995	2.2686
		Taiwan	1.0570	3.5538	2.2305
		Hong Kong	0.4384	0.5503	0.4910
		Mongolia	0.0021	0.0000	0.0011
	South East Asia		**1.2206**	**13.8784**	**7.1698**
		Singapore	0.3179	6.3449	3.1506
		Malaysia	0.2158	3.6389	1.8247
		Philippines	0.1630	2.1898	1.1156
		Thailand	0.1982	1.4592	0.7909
		Indonesia	0.2335	0.2455	0.2391
		Vietnam	0.0832	0.0000	0.0441
		Myanmar	0.0059	0.0000	0.0032
		Cambodia	0.0017	0.0000	0.0009
		Laos	0.0014	0.0000	0.0008
	Oceania		**2.1693**	**0.2357**	**1.2605**
		Australia	1.8349	0.1811	1.0576
		New Zealand	0.3342	0.0546	0.2028
		Papua New Guinea	0.0002	0.0000	0.0001
	South Asia		**0.5247**	**0.1536**	**0.3503**
		India	0.4162	0.1522	0.2921
		Pakistan	0.0719	0.0010	0.0386
		Bangladesh	0.0154	0.0003	0.0084
		Sri Lanka	0.0136	0.0000	0.0072
		Nepal	0.0076	0.0000	0.0040
East-Central Europe/NIS			**2.2061**	**1.2506**	**1.7570**
	East Central		**0.8984**	**0.7928**	**0.8477**
		Hungary	0.1679	0.4507	0.3008
		Poland	0.4589	0.0792	0.2805

		Czech Republic	0.2037	0.2294	0.2158
		Slovak Republic	0.0659	0.0335	0.0507
	NIS		**1.0310**	**0.3579**	**0.7147**
		Russia	0.7959	0.2836	0.5552
		Ukraine	0.1129	0.0000	0.0598
		Estonia	0.0456	0.0200	0.0336
		Lithuania	0.0330	0.0082	0.0213
		Latvia	0.0295	0.0049	0.0179
		Belarus	0.0006	0.0236	0.0114
		Kazakhstan	0.0023	0.0119	0.0068
		Moldova	0.0053	0.0013	0.0034
		Kyrgyzstan	0.0016	0.0036	0.0025
		Armenia	0.0031	0.0007	0.0020
		Georgia	0.0006	0.0000	0.0003
		Turkmenistan	0.0003	0.0000	0.0001
		Azerbaijan	0.0001	0.0000	0.0001
		Uzbekistan	0.0001	0.0000	0.0001
		Tajikistan	0.0001	0.0000	0.0001
	Southeast		**0.2786**	**0.1000**	**0.1946**
		Slovenia	0.0732	0.0413	0.0582
		Romania	0.0866	0.0136	0.0522
		Croatia	0.0459	0.0308	0.0388
		Bulgaria	0.0353	0.0129	0.0248
		Yugoslavia	0.0338	0.0000	0.0179
		Albania	0.0024	0.0001	0.0013
		Macedonia	0.0013	0.0013	0.0013
Middle East			1.4990	0.5569	1.0562
	West Asia		**1.4990**	**0.5569**	**1.0562**
		Israel	0.3014	0.4921	0.3910
		Iran	0.4163	0.0000	0.2206
		Turkey	0.3595	0.0515	0.2148
		United Arab Emirates	0.1769	0.0000	0.0938
		Saudi Arabia	0.1444	0.0045	0.0787
		Kuwait	0.0298	0.0010	0.0163
		Syria	0.0273	0.0000	0.0145
		Lebanon	0.0205	0.0000	0.0109
		Oman	0.0081	0.0076	0.0079
		Jordan	0.0111	0.0000	0.0059
		Yemen	0.0036	0.0000	0.0019
		Iraq	0.0000	0.0000	0.0000
Africa			0.8109	0.1289	0.4904
	Southern Africa		**0.4717**	**0.1105**	**0.3019**
		South Africa	0.4017	0.1069	0.2631
		Zimbabwe	0.0195	0.0015	0.0111
		Mauritius	0.0148	0.0017	0.0087
		Zambia	0.0082	0.0000	0.0043

	Namibia	0.0078	0.0000	0.0041
	Botswana	0.0072	0.0000	0.0038
	Mozambique	0.0060	0.0002	0.0033
	Madagascar	0.0039	0.0001	0.0021
	Angola	0.0014	0.0000	0.0008
	Malawi	0.0012	0.0000	0.0006
	Lesotho	0.0000	0.0000	0.0000
North Africa		**0.1668**	**0.0139**	**0.0949**
	Egypt	0.0919	0.0002	0.0488
	Morocco	0.0362	0.0010	0.0197
	Tunisia	0.0173	0.0120	0.0148
	Algeria	0.0214	0.0006	0.0116
	Libya	0.0000	0.0000	0.0000
West Africa		**0.1275**	**0.0022**	**0.0686**
	Nigeria	0.0832	0.0000	0.0441
	Senegal	0.0169	0.0000	0.0090
	Ghana	0.0060	0.0000	0.0032
	Cameroon	0.0048	0.0002	0.0026
	Togo	0.0042	0.0000	0.0022
	Guinea	0.0036	0.0000	0.0019
	Gabon	0.0014	0.0020	0.0017
	Mauritania	0.0019	0.0000	0.0010
	Mali	0.0013	0.0000	0.0007
	Chad	0.0012	0.0000	0.0006
	Benin	0.0011	0.0000	0.0006
	Gambia	0.0006	0.0000	0.0003
	Central African Republic	0.0006	0.0000	0.0003
	Niger	0.0005	0.0000	0.0003
	Sierra Leone	0.0000	0.0000	0.0000
	Guinea-Bissau	0.0000	0.0000	0.0000
East Africa		**0.0450**	**0.0023**	**0.0249**
	Kenya	0.0170	0.0023	0.0101
	Sudan	0.0083	0.0000	0.0044
	Tanzania	0.0074	0.0000	0.0039
	Uganda	0.0066	0.0000	0.0035
	Ethiopia	0.0054	0.0000	0.0029
	Rwanda	0.0002	0.0000	0.0001
	Eritrea	0.0000	0.0000	0.0000
	Burundi	0.0000	0.0000	0.0000
Grand Total		**98.65**	**100**	**99.29**

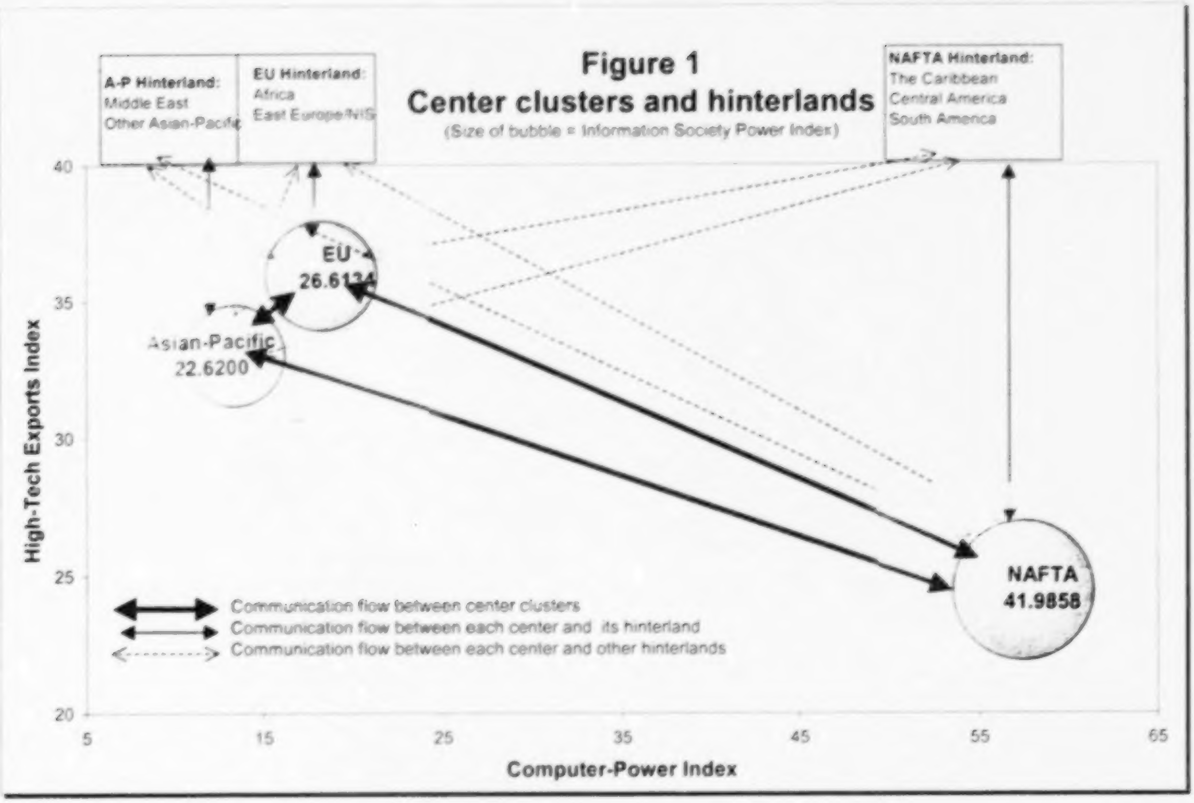

Figure 1
Center clusters and hinterlands
(Size of bubble = Information Society Power Index)

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Figure 2
NAFTA-Center Cluster
(Size of bubble = Information Society Power Index)

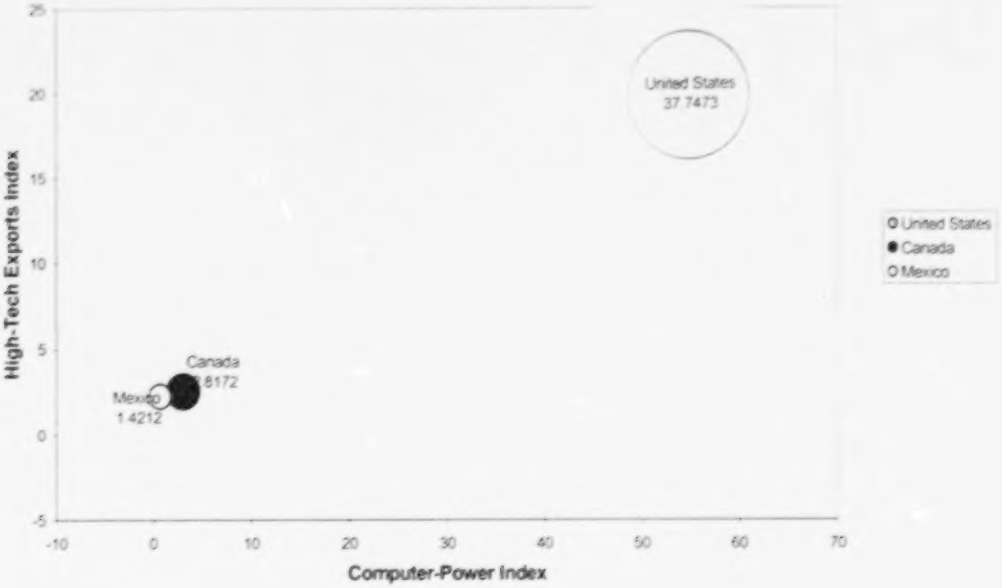
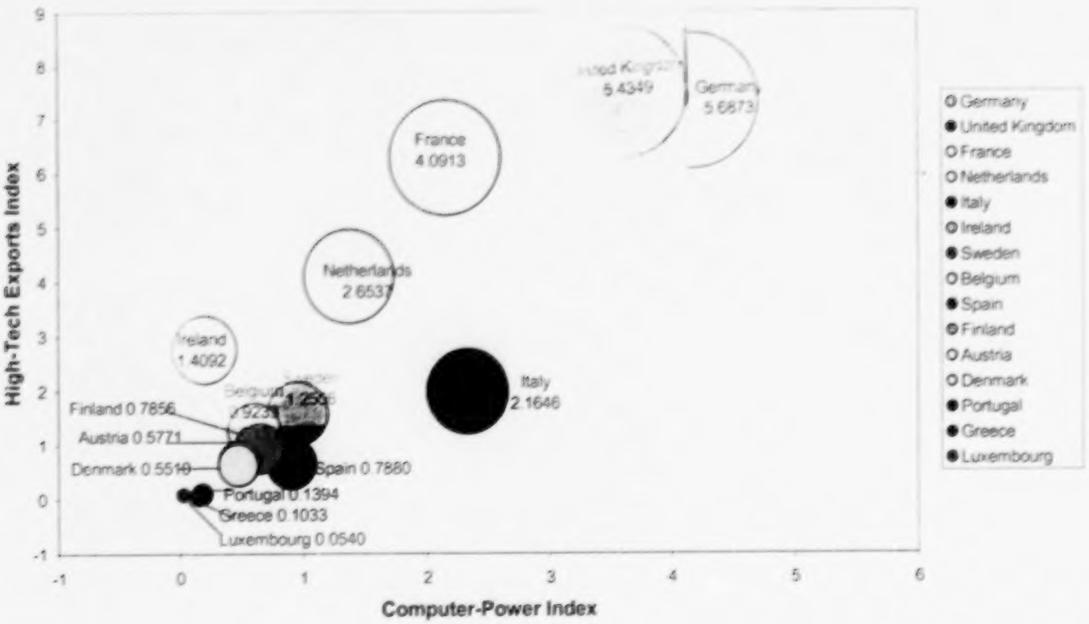


Figure 3

EU-Center Cluster

(Size of bubble = Information Society Power Index)



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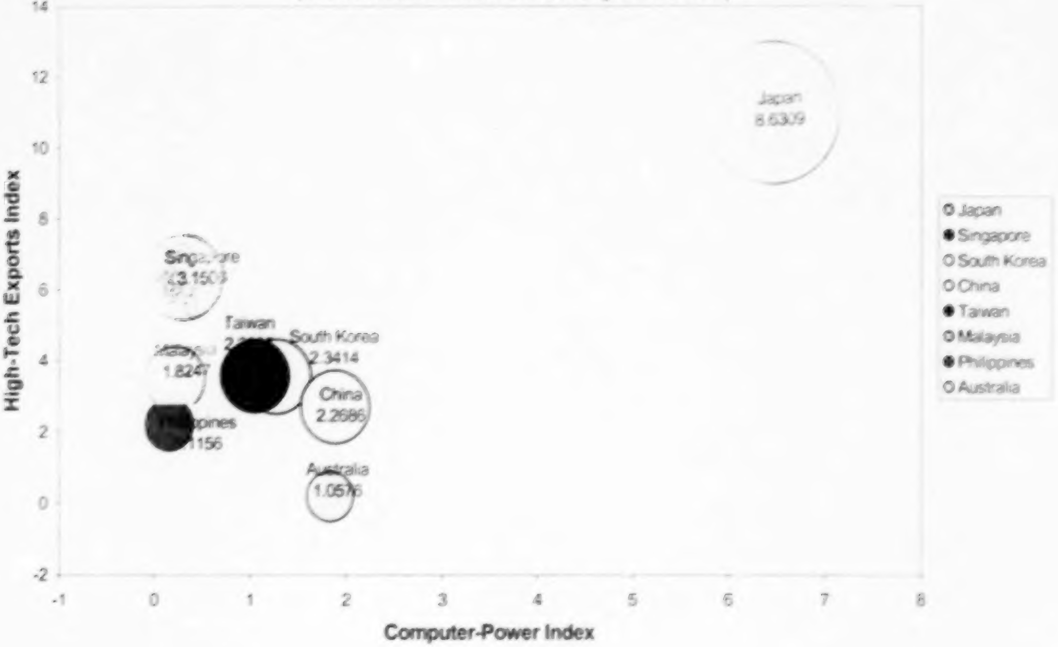

Figure 4
Asian-Pacific Center Cluster
(Size of bubble = Information Society Power Index)

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